CRUISE REPORT

ACOUSTIC EXTENSOMETER:
A SEAFLOOR OBSERVATORY EXPERIMENT

R/V THOMPSON/JASON EXPEDITIONS
TO THE SOUTHERN CLEFT SEGMENT, JUAN DE FUCA RIDGE

CLEFT98 (TN082), AUGUST 12-20, 1998 (Seattle, WA to Seattle, WA)

AND

CLEFT99 (TN099), SEPTEMBER 7-18, 1999 (Newport, OR to Newport, OR)

Funded by the Marine Geology and Geophysics/RIDGE Program
National Science Foundation

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Cruise Summary

This cruise report covers two research cruises (Cleft98 and Cleft99) on the R/V Thompson with ROV *Jason* to the southern Cleft segment of the Juan de Fuca Ridge. Both cruises had the goal of high-resolution site surveys in preparation for the deployment of new seafloor instruments called Acoustic Extensometers. These instruments are designed to continuously measure the horizontal distance across a spreading center very precisely (~1 cm) in order to detect ground deformation associated with magma intrusions or seafloor spreading events. Prototype extensometer instruments have already been developed and successfully used at Axial Seamount, Juan de Fuca Ridge (funded by the NOAA/NURP and VENTS Programs). The goal of this project, funded by the NSF/RIDGE Program, is to design and build "next-generation" instruments that will be more capable, can transmit data to a ship via acoustic modem, and will have 3-5 year lifetimes. The new extensometer instruments will be deployed in permanent seafloor benchmarks on which pressure measurements can also be made, allowing vertical as well as horizontal movements to be monitored at the same instrument sites. South Cleft is one of the NSF/RIDGE Seafloor Observatory sites on the Juan de Fuca Ridge, and our deployment site (44 deg 39.8', -130 deg 21.7') is within the larger-scale strain monitoring arrays already deployed by the USGS and Scripps. We had planned to deploy the instruments during both the Cleft98 and Cleft99 cruises, but were unable to, due to unforeseen engineering delays. Nevertheless, we were able to use the time at sea to collect high-resolution bathymetry of the site, deploy the instrument benchmarks based on this bathymetry, and make the first set of vertical deformation measurements at the benchmarks. While it is frustrating that we were not able to deploy the completed instruments, these kinds of delays are not unprecedented when developing new seafloor instrumentation, and we remain focused on finishing the job and getting a working instruments on the seafloor.

Both the Cleft98 and Cleft99 expeditions had science projects by other principal investigators piggybacked on the cruises, but the results of these outside projects will only be briefly described in this report.

Cleft98

The first task during the Cleft98 cruise on the R/V Thompson (TN082, August 12-20, 1998) was to deploy an array of 6 permanent navigation transponders at the south Cleft Observatory site, which includes the VENT3, VENT1, and PLUME vent sites. This network was used to navigate *Jason* and the DSL-120 in 1998, and can be used in future years to navigate vehicles at the site within the same reference frame. This is extremely valuable to relocating instruments on the bottom and seamlessly expanding high-resolution surveys over several years. The Cleft98 cruise included one *Jason* dive to collect Imagenex sonar bathymetry of the VENT1 site where the extensometer instruments will be deployed. The extensometers require acoustic line-of-sight between them and so high-resolution bathymetry is essential for chosing specific deployment sites for each individual instrument. Also during the Cleft98 cruise, Debra Stakes conducted an DSL-120 survey, including detailed sidescan sonar and co-registered phase bathymetry of the south Cleft Observatory site, funded by MBARI. Our Imagenex bathymetry was nested within the DSL-120 survey, and MBARI had previously collected EM-300 multibeam bathymetry of the entire Cleft segment. These 3 new datasets provide a valuable and striking view of the geology and tectonics of the segment, as well as a quantitative comparison of the resolution between the three systems.

Cleft99

The Cleft99 cruise on the R/V Thompson (TN099, September 7-18, 1999) had two main parts, an NSF/OSU part and a NOAA/PMEL part, both utilizing the *Jason* ROV at separate sites on the Juan de Fuca Ridge. The specific objective of the NOAA part of the cruise (the first 2 days, Bob Embley,

Principal Investigator) was to establish a prototype, real-time data link from an instrument on the seafloor to shore via acoustic modem and satellite. This was accomplished by using *Jason* to deploy a digital camera at a hydrothermal vent site at Axial seamount, followed by the deployment of a mooring and surface buoy nearby. The camera transmits data to the buoy via acoustic modem and then the buoy relays the data to shore via the GOES satellite. This part of the cruise was funded by the NOAA VENTS Program, is part of a larger observatory effort called NeMO, and was a complete success.

The objective of the OSU part of the cruise was to deploy twelve Acoustic Extensometer instruments at south Cleft with *Jason*. Unfortunately, the instruments were not ready to be deployed during the cruise, so instead we used *Jason* to select instrument sites and carefully position 12 permanent benchmarks (the instrument bases) into which the instruments will be placed next summer. We used the high-resolution bathymetry collected during the Cleft98 cruise for this critical task. The instrument sites span the entire axial valley floor (~1.4 km) at 100-200 m spacing, from the base of one valley wall to the other. In addition, we made precise pressure measurements in order to monitor vertical movements of the seafloor at all our new benchmarks, and tied these measurements to a larger network of pre-existing permanent benchmarks (installed by Scripps and the USGS). These pressure measurements will be the first in a time-series, and will allow us to monitor both vertical and horizontal deformation across the plate boundary at our instrument sites. We also collected additional high-resolution Imagenex sonar bathymetry of volcanic and tectonic features within the axial valley in order to place our instrumental observations into a meaningful geologic context. Finally, we performed a number of important deep-water tests on some of the extensometer instrument components and software to pave the way for their successful completion. While it was frustrating to not deploy the extensometer instruments as planned, we are now in a good position to be able to quickly install the finished instruments into their bases next summer, and we have already collected the first set of vertical deformation measurements at the site.

Jason Dive Summary: Cleft98

Jas236

The primary goal of Jason dive 263 was to collect an Imagenex sonar survey at south Cleft from which specific instrument deployment sites could be picked for the extensometers which would ensure that they have acoustic line-of-sight between them. Three across axis lines were collected at 25 m altitude and two along-axis lines were collected at 50-m altitude. In addition two HOBO high-temperature probes were deployed on sulfide chimneys within the VENT1 hydrothermal vent site.

Jason Dive Summaries: Cleft99

Jas263

Jason dive 263 was at the 1998 eruption site on the upper south rift zone of Axial Volcano. Before the dive, a digital camera with an acoustic modem was free-falled from the ship to the seafloor. The primary goal of the Jason dive was to locate and carefully position the digital camera and its temperature probes at a hydrothermal vent site on the 1998 lava flow. After the camera was in place, and

while the acoustic modem communication link was being evaluated, Imagenex sonar data was collected by Jason to expand a high-resolution bathymetric survey already collected by ROPOS. After the dive, a surface buoy was deployed nearby to communicate with the digital camera via acoustic modem, and then transmit that data via satellite to shore.

Jas264

Jason dive 264 was also at the 1998 eruption site at Axial Volcano. However, once the buoy was deployed, Jason could no longer dive at the digital camera site, so the remaining NOAA time was used to expand the existing NOAA Imagenex sonar coverage to the south.

Jas265

The remaining Jason dives were all at south Cleft. Before Jason dive 265 benchmarks 1, 2, 3, and 4 were free-falled from the ship to the seafloor. Jason then located them all on the bottom and carefully positioned them before making pressure measurements at each, and then releasing their counterbalance flotation (which were recovered by small boat at the surface). The USGS tripod #1 was also found and a pressure measurement was made there. Imagenex sonar data was collected to expand the Cleft98 dataset. At the end of the dive Jason returned to the smoker chimneys in the VENT1 area where the HOBO high-temperature probes were deployed during Cleft98. An additional HOBO probe was deployed and SM-2000 sonar data was collected for Peter Rona at one of the smokers. The dive was terminated due to rising winds and seas.

Jas266

Benchmarks 9, 10, 11, and 12 were dropped from the surface before Jason returned to the bottom for dive 266. Jason located and positioned the four benchmarks, made pressure measurements at each, and then released the counterbalance flotation on all but #12 (due to nightfall). An extensometer modem dunk test (lowering an instrument 100 m on the CTD wire and communicating to it from another unit dangled over the side) was conducted while Jason was still on the bottom. Following this test, Jason located USGS tripod #4 and SIO benchmark #7 and pressure measurements were made at each of them and then tied back to the extensometer benchmarks. SIO benchmark #2 was searched for, but not located. An Imagenex sonar survey of the PLUME vent area (to the south of the VENT1 area) was completed and then a HOBO high-temperature probe was deployed at an active chimney there.

Jas267

Jason dive 267 began by doing some geologic traverses to ground-truth some of the features revealed by the Imagenex sonar bathymetry. Then USGS tripods #2 and #3 were found and pressure measurements were made at each and then tied back to our extensometer benchmarks. Imagenex sonar was collected during the transits.

Jas268

Benchmarks 5, 6, 7, and 8 were dropped from the ship (benchmark #7 with a test instrument in it), and then Jason dove to locate them on the bottom. A Datasonics modem receiver was installed on Medea for this dive to test the acoustic modems on the extensometer instruments in the bottom environment. Jason located and positioned the benchmarks, made pressure measurements at all of them, and then released the counterbalance flotation (including the test instrument in benchmark #7, and the flotation from benchmark 12). An Imagenex sonar survey of the VENT3 area (north of VENT1) was started, but not completed during the remainder of the dive.

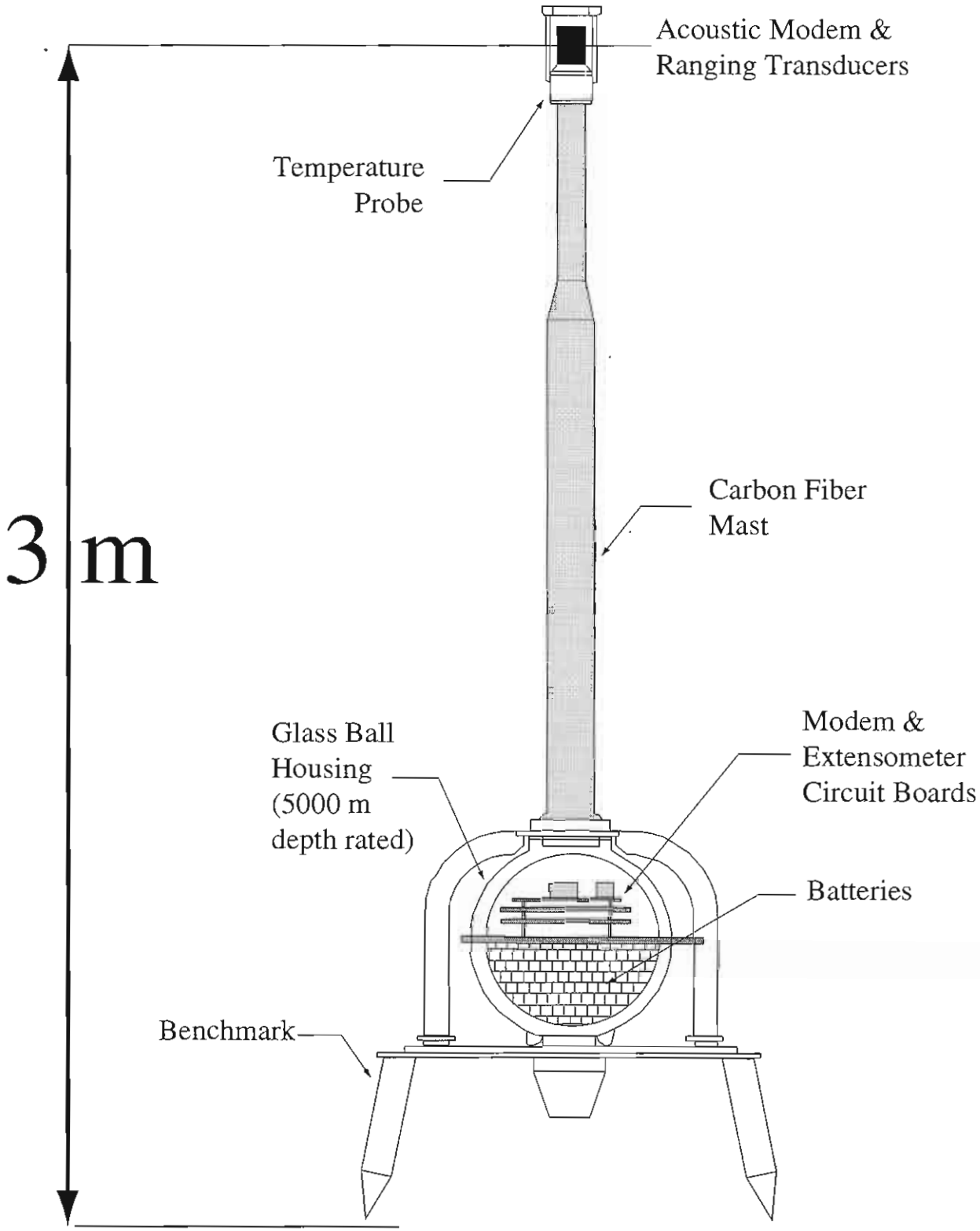
SCIENTIFIC CREW LIST

CLEFT99

Name	Title	Institutional Affiliation
Bowen, Andy	Technician	JASON
Chadwick, Bill	Scientist	OSU
Crook, Tom	Technician	JASON
Elder, Bob	Technician	JASON
Elder, Craig	Technician	JASON
Embley, Robert	Scientist	NOAA/PMEL
Gegg, Steve	Technician	JASON
Getsiv, Julia	Technician	OSU
Heintz, Matt	Technician	JASON
Howland, Jon	Technician	JASON
Kurokawa, Tomoko	Student	OSU
Lindley, Mark	Technician	NOAA/PMEL
Martin, Bill	Technician	U. Washington
Meinig, Chris	Technician	NOAA/PMEL
Merle, Susan	Technician	OSU
Naiman, Matt	Technician	JASON
O'Neill, Joanna	Technician	UCSB
Realander, Mike	Technician	U. Washington
Sellers, Will	Technician	JASON
Stapp, Mike	Technician	NOAA/PMEL
Sullivan, Kevin	Technician	MBARI

CLEFT98

Name	Title	Institutional Affiliation
Chadwick, Bill	Scientist	OSU
Crook, Tom	Technician	WHOI
Crowder, Lisa	Student	UCSB
Elder, Bob	Technician	WHOI
Gegg, Steve	Technician	WHOI
Gleason, Skip	Technician	WHOI
Graves, Dale	Technician	MBARI
Hanneman, Susan	Technician	OSU
Heintz, Matt	Technician	WHOI
Hickey, Pat	Scientist	WHOI
Lemon, Peter	Technician	WHOI
Maher, Norm	Technician	MBARI
Martin, William	Technician	U. Washington
Namon, Matt	Technician	WHOI
Norby, Eric	Technician	WHOI
O'Neill, Joanna	Student	UCSB
Pizarro, Oscar	Technician	WHOI
Postel, James	Technician	U. Washington
Scheirer, Dan	Technician	Brown U.
Sellers, Will	Technician	WHOI
Sharfstein, Phil	Student	UCSB
Stakes, Debra	Scientist	MBARI
Varnum, Jim	Technician	WHOI



Next-generation Acoustic Extensometer in seafloor benchmark.

CLEFT98

August 12-20, 1998

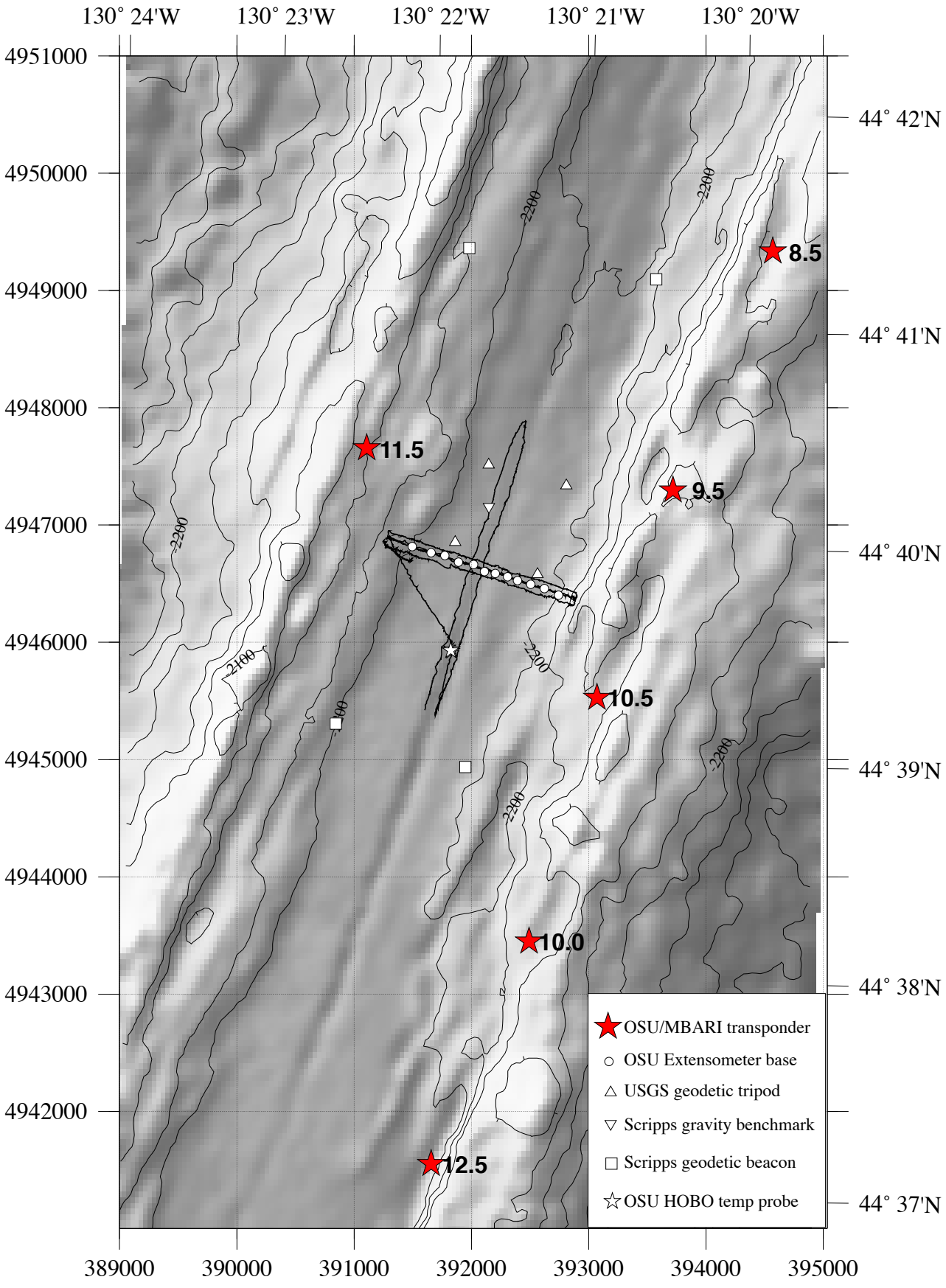
South Cleft
Jason Dive 236

Cleft98 Cruise Summary

Start/End time [JD (mo/dy): hr(Z)]	Location and tasks	Jason Dive #	Jason Dive Time	Jason Bottom Time	Why Dive Ended	Imagenex line numbers	Imagenex time (hr)
224-6 (8/12-4): 1600-1000	**Transit: Seattle-South Cleft** (including DSL-120 and Jason dunk test in Puget Sound)	-					
226 (8/14): 1000 - 2200	**South Cleft:** On station. Deployed and calibrated nine transponders (2 OSU, 3 MBARI, and 4 WHOI)	-					
226-7 (8/14-15): 2200-1740	**South Cleft:** Troubleshooting of DSL-120 vehicle (due to ground faults and flooded connectors)						
227-9 (8/15-17): 1740 - 0700	**South Cleft:** DSL-120 survey of south Cleft (Debra Stakes, MBARI)	-					
229 (8/17): 0700-1920	**South Cleft:** Deployed and calibrated one additional transponder (OSU), Medea dunk test, recovered 4 WHOI transponders used for DSL-120 survey						
229-31 (8/17-19): 1920-0320	**South Cleft:** Jason dive to collect Imagenex survey of extensometer deployment site, do one geologic/video tranverse across axis to ground-truth the Imagenex, and deploy 2 HOBO probes in VENT1 chimneys	**236**	32 hr, 0 min	27 hr, 20 min	End of dive	1, 2, 3, 3T, 4, 5	20.75
231-32 (8/19-20): 0320-2000	**Transit: South Cleft-Seattle**						

South Cleft

1998 Jason dive tracks on EM300 multibeam bathymetry (courtesy of MBARI)



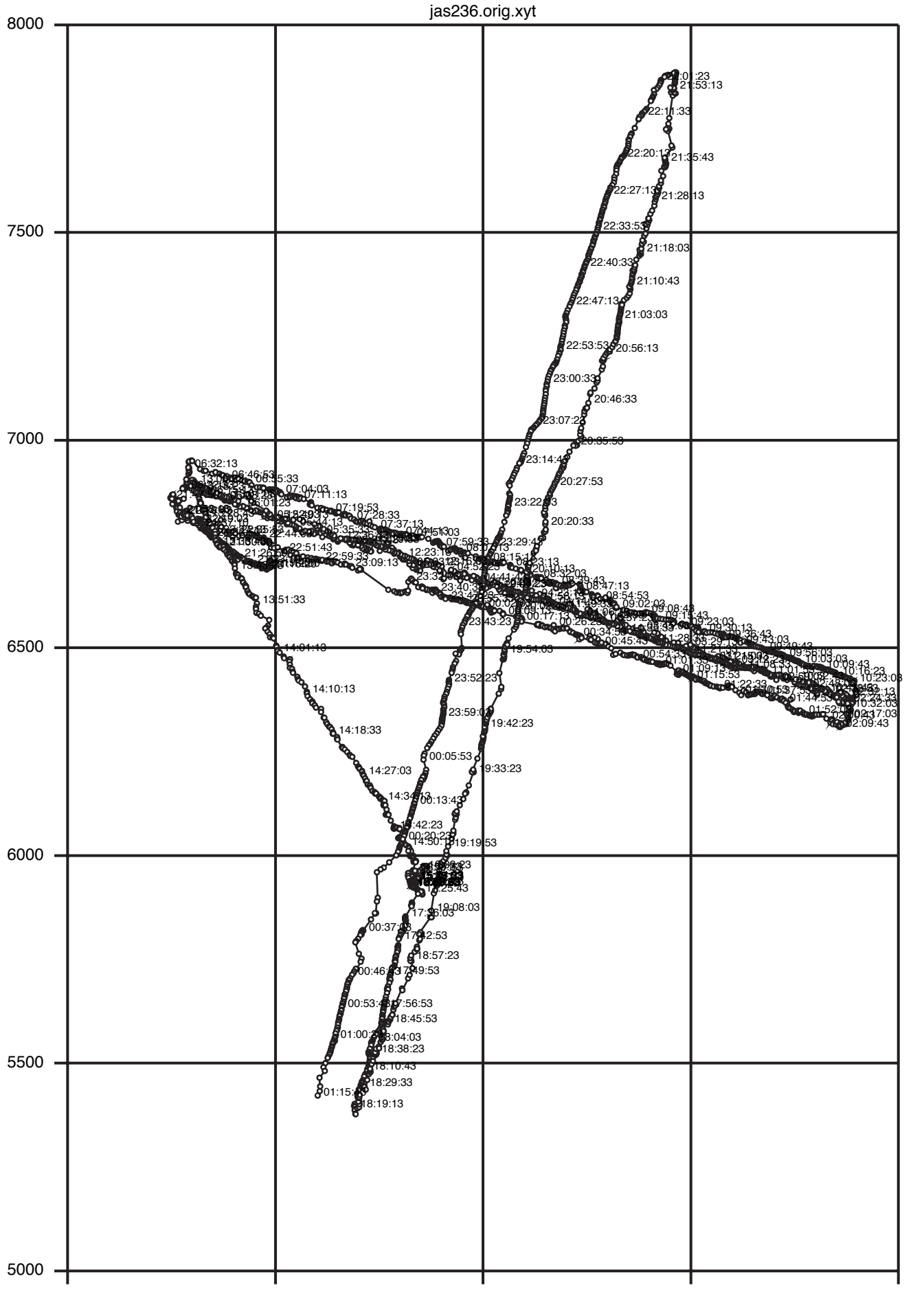
JASON
DIVE 236

August 17-19, 1998

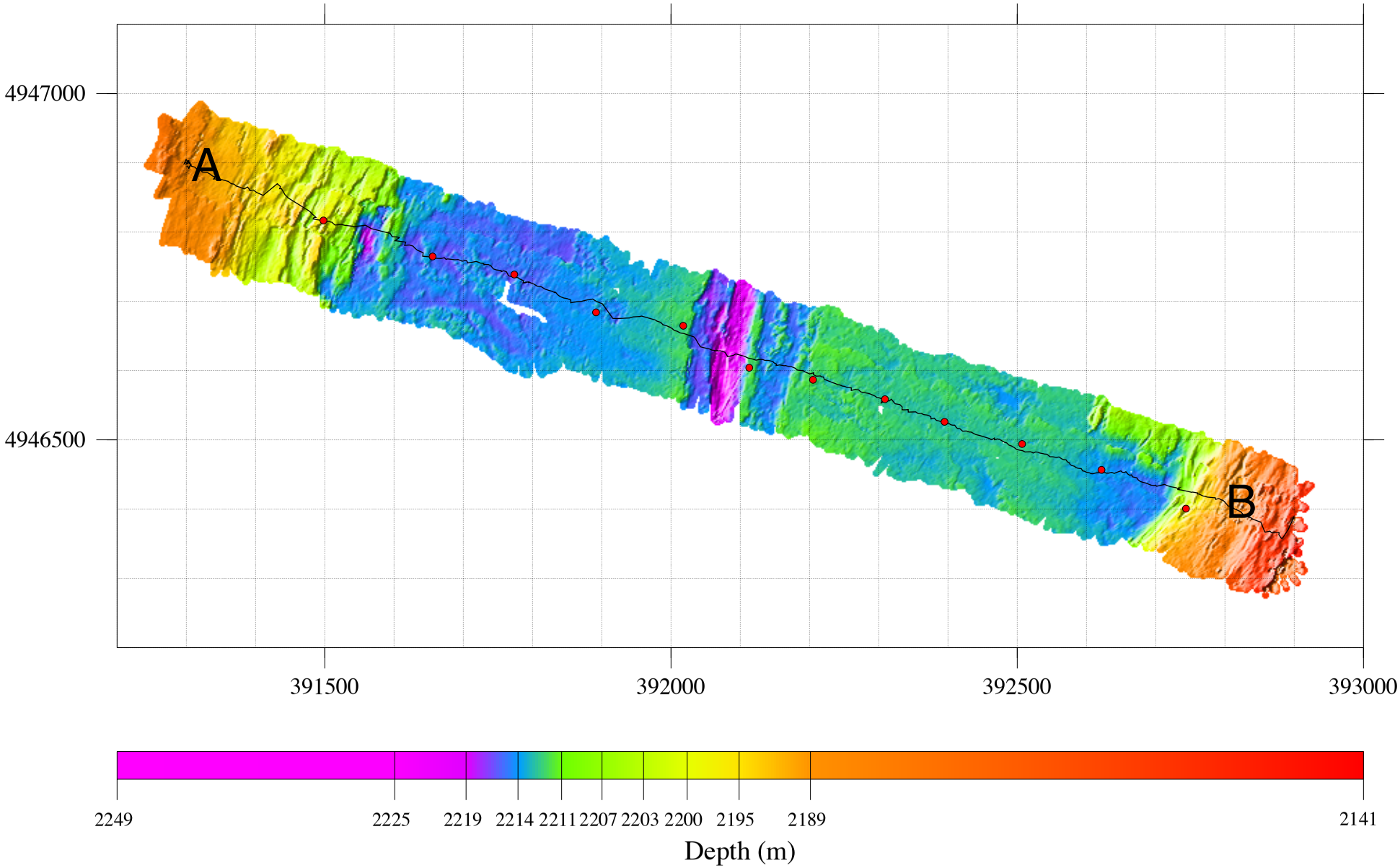
South Cleft

CLEFT98 JASON 236 DIVE SUMMARY

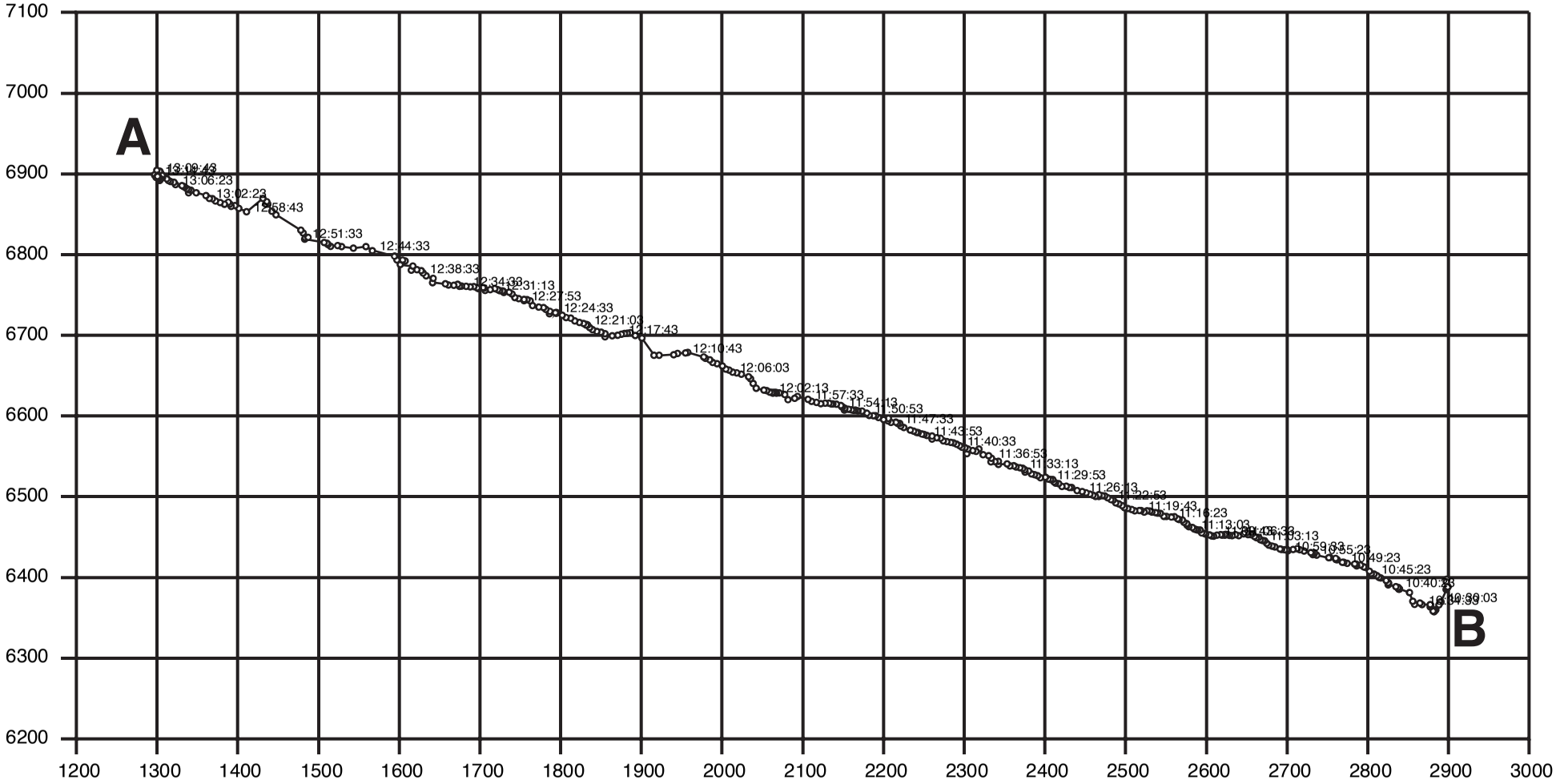
Date	JD	Time	Description
8/17/99	229	19:20	Jason in water
		21:49	Jason on bottom
		22:08	Begin Imgnx line 1
8/18/99	230	2:05	End Imgnx line 1
		2:33	Begin Imgnx line 2
		6:24	End Imgnx line 2
		6:36	Begin Imgnx line 3
		10:23	End Imgnx line 3
		10:27	Begin bottom traverse
		13:13	End bottom traverse
		13:23	Begin Imgnx line 3T-A
		14:32	End Imgnx line 3T-A
		14:46	Jason back on bottom
		15:47	HOBO #136 deployed
		17:19	HOBO #133 deployed
		17:24	Begin Imgnx line 3T-B
		18:20	End Imgnx line 3T-B
		18:20	Begin Imgnx line 4
		21:51	End Imgnx line 4
		22:17	Begin Imgnx line 5
8/19/99	231	1:11	End Imgnx line 5
		1:11	Jason off bottom
		3:18	Jason on deck

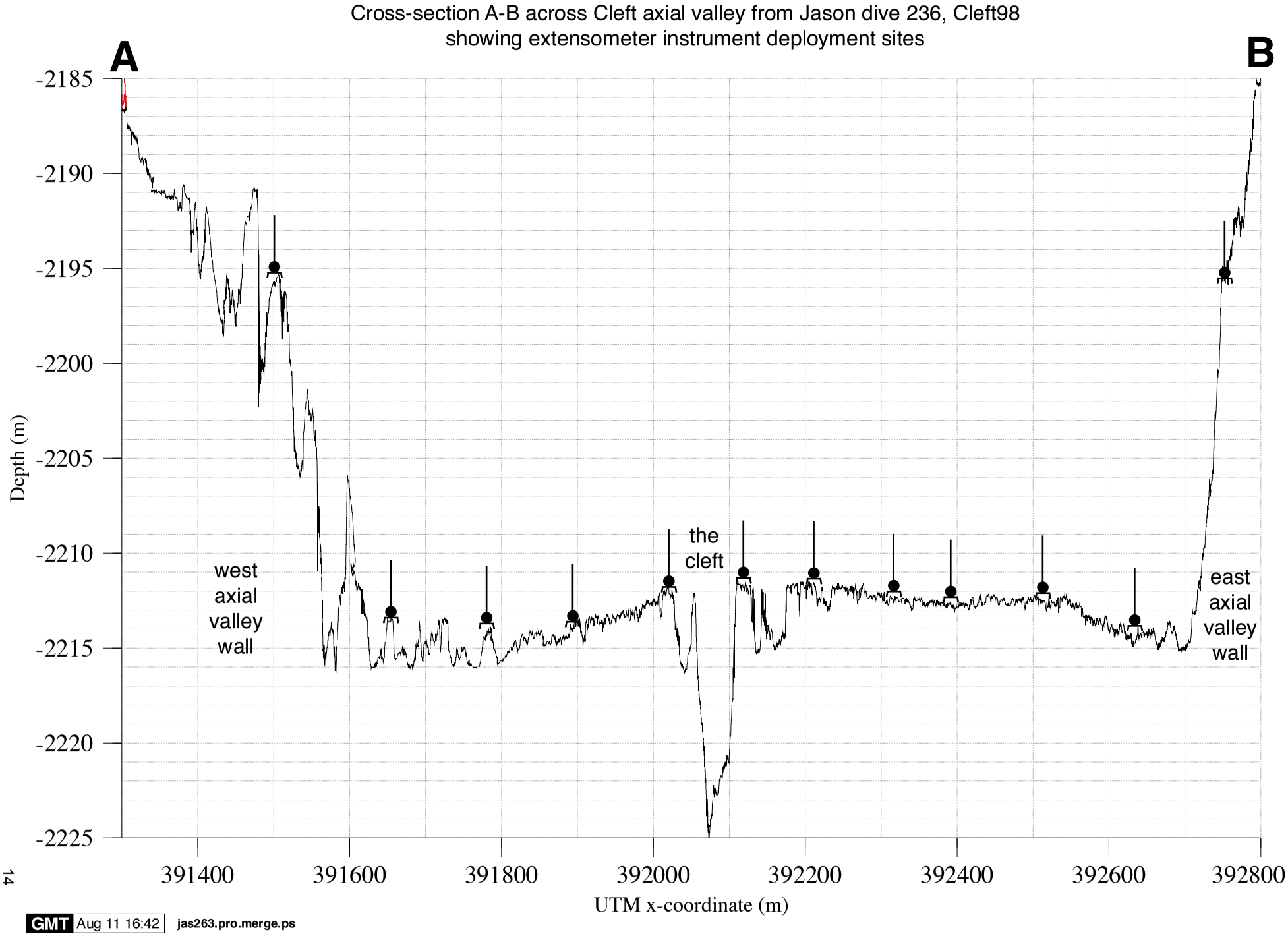

jas236.orig.xyt
8000
7500
7000
6500
6000
5500
5000
1000
1500
2000
2500
3000

Cleft98 Imagenex data showing extensometer deployment sites and location of cross-section A-B



jas236.bot.xyt - bottom traverse across the Cleft axial valley, Jason dive 236, Cleft98
showing location of depth cross-section A-B and extensometer instrument deployment sites




Cross-section A-B across Cleft axial valley from Jason dive 236, Cleft98
showing extensometer instrument deployment sites
A
B
-2185
-2190
-2195
-2200
-2205
-2210
-2215
-2220
-2225
Depth (m)
west
axial
valley
wall
the
cleft
east
axial
valley
wall
391400
391600
391800
392000
392200
392400
392600
392800
UTM x-coordinate (m)
GMT Aug 11 16:42
jas263.pro.merge.ps

CLEFT99

September 7-18, 1999

Axial Volcano

Jason Dive 263

Jason Dive 264

South Cleft

Jason Dive 265

Jason Dive 266

Jason Dive 267

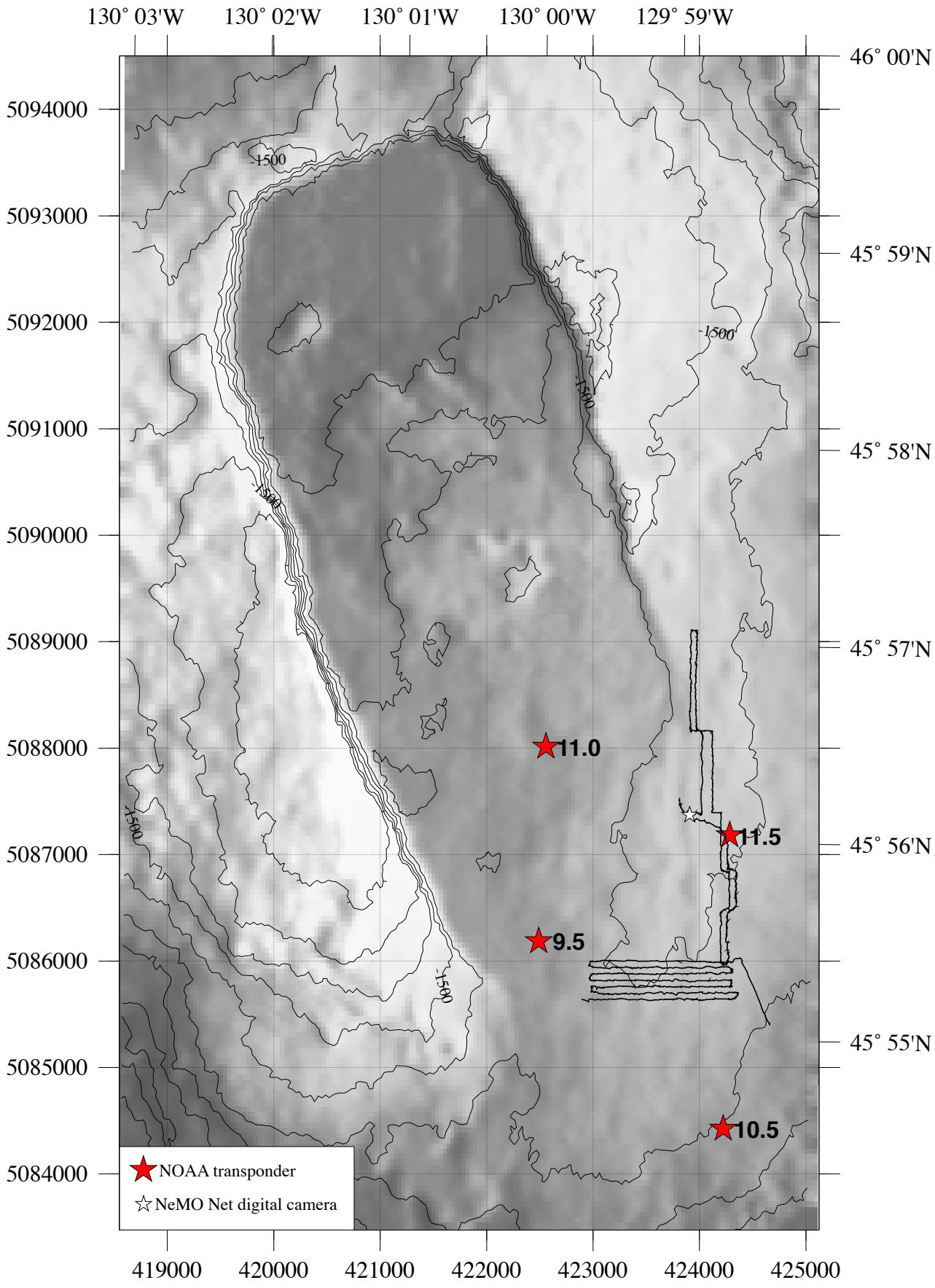
Jason Dive 268

Cleft99 Cruise Summary

Start/End time [JD (mo/dy): hr(Z)]	Location and tasks	Jason Dive #	Jason Dive Time	Jason Bottom Time	Why Dive Ended	Imagenex line numbers	Imagenex time (hr)
250-1 (9/7-8): 1830-1700	**Transit: Newport-Axial**	-					
251 (9/8): 1700 - 2030	**Axial:** On station. Turned on transponders, Deployed digital camera (freefall from ship)	-					
251-2 (9/8-9): 2124-1704	**Axial:** Jason dive to position digital camera, collect Imagenex sonar data	**263**	19 hr, 40 min	16 hr, 40 min	End of dive	23,24,25,26,20,21,22,27,28,29	11.2
252 (9/9): 1930 - 2215	**Axial:** Deployed NeMO net buoy and mooring from ship	-					
253 (9/10): 0100-1650	**Axial:** Jason dive to collect Imagenex sonar data	**264**	15 hr, 50 min	12 hr, 46 min	End of dive	1,2,3,4,5,6,7	12.8
253 (9/10): 1700 - 2300	**Transit: Axial to South Cleft**	-					
253 (9/10): 2311 - 2339	**South Cleft:** Deploy benchmarks #1-4 from ship	-					
254-5 (9/11-12): 0113-0420	**South Cleft:** Jason dive to position benchmarks #1-4, locate USGS tower #1, pressure measurements at benchmarks & USGS tower, release glass floats, Vent 1: looked for last year's HOBO probes and deployed new one	**265**	27 hr, 7 min	23 hr, 20 min	Dive aborted due to bad weather (lost 9 hours)	99-1A & B, 99-2, 99-5, 99-6, 99-7	4.6
255 (9/12): 0505 - 0515	**South Cleft:** Deploy benchmarks #9-12 from ship	-					
255-8 (9/12-15): 1604-0525	**South Cleft:** Jason dive to position benchmarks #9-12, locate USGS tower #4 and SIO-7, pressure measurements at benchmarks (4, 9-12)/USGS tower/SIO-7, deploy HOBO probe #137 at Plume	**266**	61 hr, 21 min	57 hr, 46 min	End of dive; Jason routine maintenance	99-12 to 15, 99-10, 99-9, 99-23 to 28, 99-17 to 18, 99-29	22.6
258 (9/15): 0659-2210	**South Cleft:** Jason dive, E-W geologic transects of main cleft, pressure measurement at benchmark 9 & USGS towers #2 & #3	**267**	15 hr, 11 min	11 hr, 20 min	End of dive	2 transits	2.2
258-9 (9/15-16): 2234 - 0051	**South Cleft:** Deploy extensometer for testing in benchmark 7 and empty benchmarks 5, 6 & 8 from ship	-					
259-60 (9/16-17): 0133-0230	**South Cleft:** Jason dive to position extensometer (BM 7) and benchmarks 5, 6 & 8, release glass balls, pressure measurements	**268**	24 hr, 57 min	21 hr, 16 min	Dive ended to allow time for transit to Axial to check buoy	1 transit, 99-14, 99-33 to 34	6.3
260 (9/17): 0236-0530	**South Cleft:** Disable all transponders, extensometer acoustic modem test on CTD wire	-					
260 (9/17): 0530-1130	**Transit: South Cleft-Axial**						
260 (9/17): 1200-1500	**Axial:** Test NeMO camera and buoy, both check out	-					
260-1 (9/17-18): 1500-2000	**Transit: Axial-Newport**						
		6 dives	162 hr, 7 min (6.75 days)	143 hr, 8 min (5.95 days)			59 hr, 42 min (2.49 days)

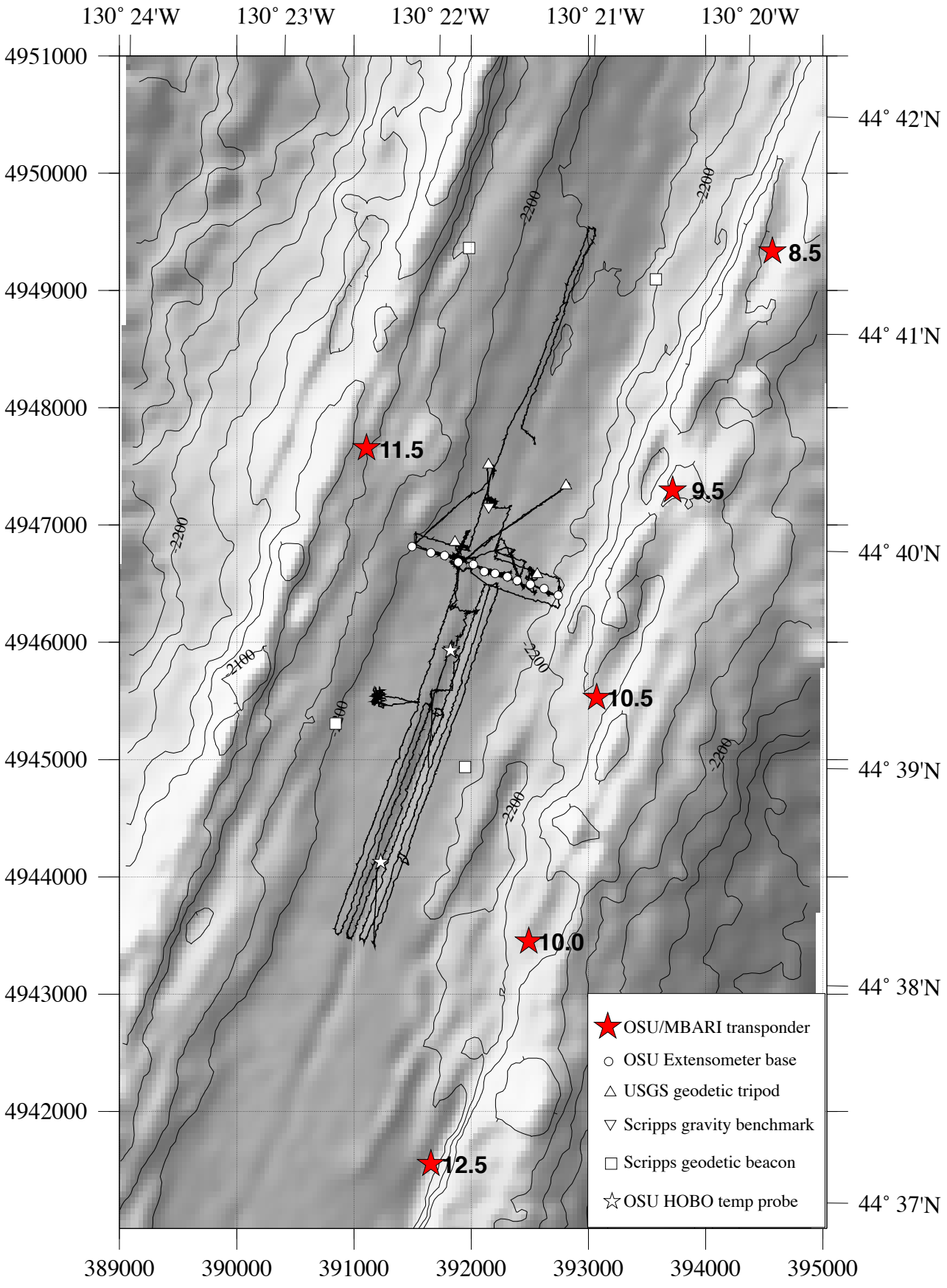
Axial

Jason dive tracks on EM300 multibeam bathymetry (courtesy of MBARI)



South Cleft

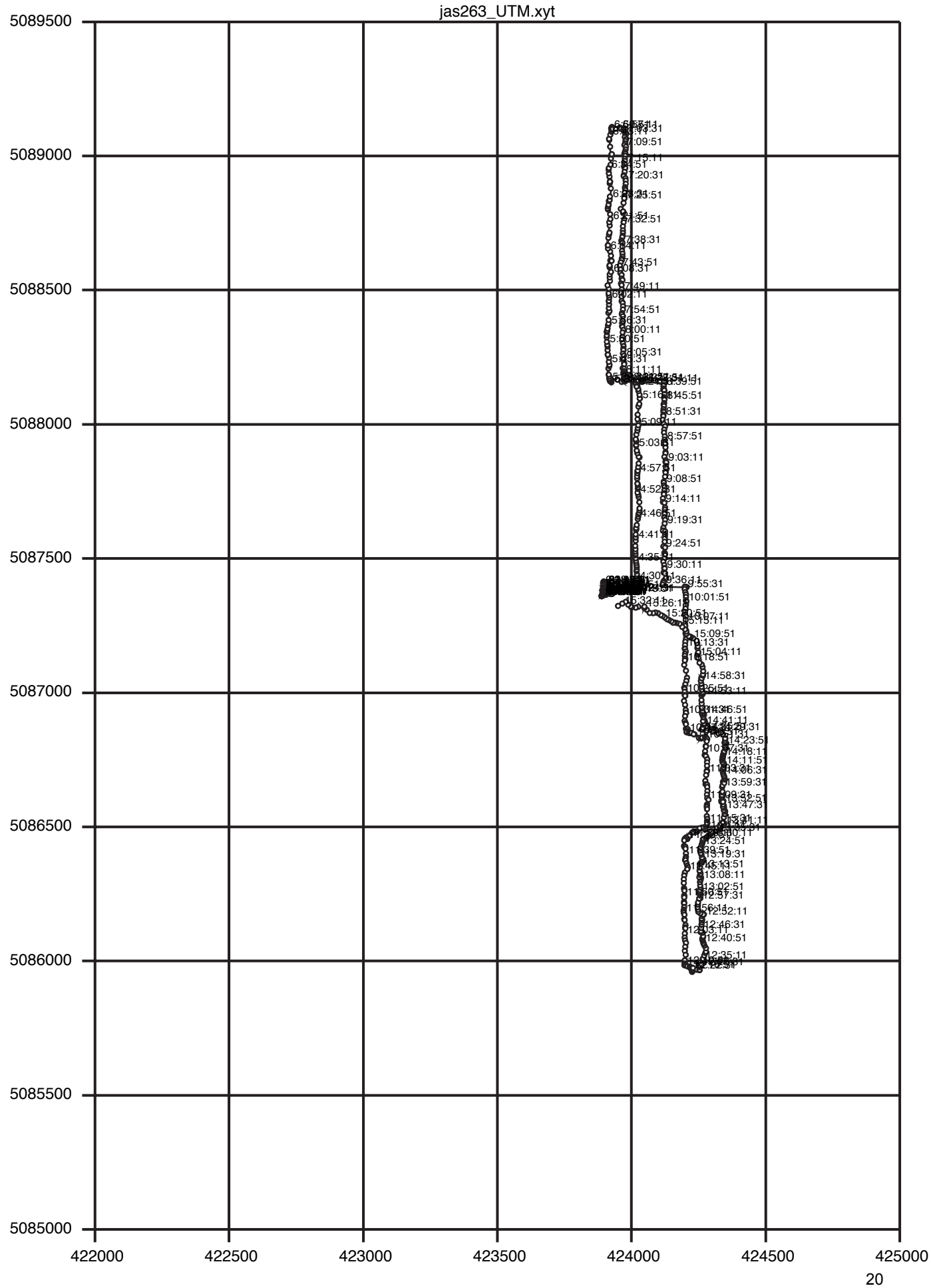
1999 Jason dive tracks on EM300 multibeam bathymetry (courtesy of MBARI)



JASON
DIVE 263

September 8-9, 1999

Axial Volcano


jas263_UTM.xyt
5089500
5089000
5088500
5088000
5087500
5087000
5086500
5086000
5085500
5085000
422000
422500
423000
423500
424000
424500
425000

JASON DIVE 263

Date/Time	UTM X	UTM Y	Depth	Alt	Hdg	Comments	
JAS263							
99/09/08 21:23:31.00	-100000.0	-100000.0	-1.6	30.0	152.7	Jason off deck	
99/09/08 21:24:23.00	-100000.0	-100000.0	-1.3	30.0	207.6	START LOWERING	
99/09/08 21:26:50.00	425793.6	5081912.6	-0.5	1.9	125.3	Medea in the water, unsure of time	
99/09/08 21:31:56.00	424494.4	5086831.7	100.0	30.0	145.6	100 m depth	
99/09/08 21:46:00.00	424753.1	5086915.2	500.4	18.1	107.7	500 m depth	
99/09/08 22:03:14.00	424471.7	5087070.1	1001.0	30.0	104.1	1000 m depth	
99/09/08 22:36:09.00	423996.3	5087330.4	1232.9	30.0	120.3	We were holding depth at ~1225 m until ship caught up with target, now lowering	
99/09/08 22:45:52.00	423943.5	5087361.6	1450.7	30.0	107.1	START TAPES	
99/09/08 22:47:27.00	423914.2	5087373.1	1466.0	30.0	316.8	ON BOTTOM	
99/09/08 22:52:18.00	423894.8	5087379.9	1509.3	8.1	25.1	ON BOTTOM	
99/09/08 22:54:21.00	423896.0	5087386.5	1514.2	3.3	56.9	Marker on bottom in view	
99/09/08 22:54:31.00	423896.0	5087390.2	1514.6	2.8	69.7	VID_GRAB	
99/09/08 22:54:50.00	423897.5	5087392.0	1514.1	3.3	106.7	VID_GRAB	
99/09/08 22:55:41.00	423896.7	5087394.1	1513.3	4.0	50.8	video instrument in sight	
99/09/08 22:56:13.00	423894.5	5087395.9	1507.6	9.7	50.4	VID_GRAB	
99/09/08 22:57:27.00	423900.0	5087403.0	1514.3	2.8	84.0	VID_GRAB	
99/09/08 22:58:46.00	423900.4	5087400.9	1513.8	3.2	47.8	laser seen on bottom	
99/09/08 22:58:56.00	423900.4	5087400.9	1513.9	3.2	47.2	VID_GRAB	
99/09/08 22:59:34.00	423903.2	5087400.0	1513.4	3.4	48.2	VID_GRAB	
99/09/08 22:59:44.00	423905.6	5087400.7	1513.7	3.0	40.8	VID_GRAB	
99/09/08 22:59:51.00	423905.6	5087400.7	1513.4	3.3	27.5	VID_GRAB	
99/09/08 22:59:56.00	423905.6	5087400.7	1513.3	3.5	23.4	VID_GRAB	
99/09/08 23:00:05.00	423905.5	5087399.8	1513.2	3.7	9.1	VID_GRAB	
99/09/08 23:00:52.00	423906.4	5087400.0	1512.9	4.7	2.5	weight down off small shelf	
99/09/08 23:00:55.00	423906.4	5087400.0	1512.9	5.2	2.6	VID_GRAB	
99/09/08 23:01:28.00	423907.1	5087399.3	1512.9	5.2	2.5	instrument has landed just on edge of a drop	
99/09/08 23:01:39.00	423907.1	5087399.3	1512.9	5.2	3.4	VID_GRAB	
99/09/08 23:03:05.00	423907.8	5087401.7	1512.9	5.6	338.6	VID_GRAB	
99/09/08 23:03:44.00	423908.4	5087405.6	1512.9	4.0	338.2	35mm flash is not working	
99/09/08 23:04:52.00	423906.3	5087402.9	1514.1	2.9	346.5	VID_GRAB	
99/09/08 23:05:09.00	423905.8	5087404.0	1514.5	1.9	353.9	VID_GRAB	
99/09/08 23:05:37.00	423906.0	5087403.7	1514.5	2.3	348.2	Moving instrument away from wall so we can remove pin from weight	
99/09/08 23:05:45.00	423905.5	5087404.4	1514.4	2.5	354.1	VID_GRAB	
99/09/08 23:06:12.00	423905.5	5087403.8	1514.4	2.5	11.2	VID_GRAB	
99/09/08 23:06:46.00	423906.0	5087403.7	1514.3	2.7	341.9	VID_GRAB	
99/09/08 23:06:56.00	423906.0	5087403.7	1513.3	2.9	342.9	VID_GRAB	
99/09/08 23:07:10.00	423905.7	5087405.6	1512.5	3.0	342.4	Instrument being moved	
99/09/08 23:07:13.00	423905.7	5087405.6	1512.6	4.2	343.0	VID_GRAB	
99/09/08 23:08:20.00	423903.8	5087407.9	1515.7	1.4	335.7	VID_GRAB	

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99/09/08 23:08:43.00	423902.8	5087406.4	1515.7	1.4	333.9	VID_GRAB	
99/09/08 23:09:11.00	423902.6	5087406.4	1517.1	0.8	340.6	VID_GRAB	
99/09/08 23:10:07.00	423901.6	5087408.4	1517.1	0.8	339.2	Removing pings	
99/09/08 23:10:13.00	423901.6	5087408.4	1517.1	0.9	338.8	VID_GRAB	
99/09/08 23:10:18.00	423901.6	5087408.4	1517.1	30.0	334.8	VID_GRAB	
99/09/08 23:13:35.00	423902.8	5087406.2	1515.5	1.7	299.0	VID_GRAB	
99/09/08 23:13:50.00	423903.6	5087407.6	1516.2	1.0	275.8	VID_GRAB	
99/09/08 23:14:00.00	423903.6	5087407.6	1516.7	0.7	278.9	Moving to remove second pin	
99/09/08 23:14:04.00	423906.4	5087412.3	1516.9	0.8	271.0	VID_GRAB	
99/09/08 23:14:20.00	423906.4	5087412.3	1517.0	0.6	260.1	VID_GRAB	
99/09/08 23:14:27.00	423904.1	5087409.4	1517.3	30.0	258.2	VID_GRAB	
99/09/08 23:15:21.00	423905.4	5087408.0	1517.4	0.7	253.9	VID_GRAB	
99/09/08 23:15:50.00	423904.5	5087408.0	1517.4	0.9	253.1	VID_GRAB	
99/09/08 23:16:06.00	423904.7	5087408.9	1517.4	0.7	254.3	VID_GRAB	
99/09/08 23:16:21.00	423904.7	5087408.9	1517.4	0.9	254.7	Second tie to weight removed	
99/09/08 23:17:23.00	423904.7	5087408.6	1517.4	0.8	254.7	Instrument now free to be moved	
99/09/08 23:18:05.00	423905.3	5087408.2	1517.4	0.7	254.7	Will be moving back to target we landed near	
99/09/08 23:18:47.00	423905.0	5087408.2	1517.4	30.0	255.1	Moving back to N41	
99/09/08 23:20:03.00	423906.5	5087411.3	1515.8	1.6	203.3	Moving to find marker N41, the one we landed near	
99/09/08 23:20:55.00	423909.3	5087411.2	1515.9	4.0	202.2	VID_GRAB	
99/09/08 23:21:28.00	423909.9	5087410.1	1514.7	4.9	185.3	weight is sitting in collapsed lava pond	
99/09/08 23:21:39.00	423909.9	5087410.1	1515.0	2.5	191.9	Marker in sight	
99/09/08 23:22:03.00	423905.4	5087393.5	1515.0	2.4	226.2	VID_GRAB	
99/09/08 23:22:05.00	423905.4	5087393.5	1515.2	2.4	230.9	VID_GRAB	
99/09/08 23:22:09.00	423905.4	5087393.5	1515.2	2.4	231.0	VID_GRAB	
99/09/08 23:22:16.00	423905.4	5087393.5	1514.8	2.7	223.0	Back at marker N41	
99/09/08 23:23:24.00	423904.2	5087393.3	1514.4	5.9	235.5	Looking for a site with tubeworms to move instrument	
99/09/08 23:23:30.00	423904.2	5087393.3	1514.5	2.8	238.0	VID_GRAB	
99/09/08 23:23:34.00	423904.2	5087393.3	1514.6	2.7	239.7	VID_GRAB	
99/09/08 23:23:38.00	423904.2	5087393.3	1514.6	2.8	239.5	VID_GRAB	
99/09/08 23:23:57.00	423906.2	5087390.3	1514.5	2.8	238.1	VID_GRAB	
99/09/08 23:24:06.00	423905.9	5087391.6	1515.0	2.4	228.5	VID_GRAB	
99/09/08 23:24:17.00	423905.9	5087391.6	1515.2	2.2	227.8	VID_GRAB	
99/09/08 23:25:26.00	423904.7	5087390.4	1514.6	2.8	206.5	Lots of debris in water	
99/09/08 23:26:27.00	423903.7	5087388.1	1516.1	1.2	197.4	VID_GRAB	
99/09/08 23:27:04.00	423902.8	5087384.9	1516.1	1.6	191.0	VID_GRAB	
99/09/08 23:27:07.00	423902.8	5087384.9	1516.7	1.1	191.2	VID_GRAB	
99/09/08 23:27:13.00	423902.8	5087384.9	1516.6	1.1	194.0	VID_GRAB	
99/09/08 23:27:21.00	423902.8	5087384.9	1517.4	0.7	193.9	VID_GRAB	
99/09/08 23:27:24.00	423900.8	5087381.9	1517.2	0.7	194.2	VID_GRAB	
99/09/08 23:27:38.00	423900.8	5087381.9	1516.6	1.2	194.3	possible site	

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99/09/08 23:27:44.00	423901.6	5087382.1	1516.5	1.3	194.4	VID_GRAB	
99/09/08 23:27:49.00	423901.6	5087382.1	1516.5	1.3	194.4	VID_GRAB	
99/09/08 23:28:04.00	423900.8	5087382.5	1516.4	1.4	194.5	looking south in this position	
99/09/08 23:28:32.00	423900.2	5087382.5	1516.4	1.4	195.0	VID_GRAB	
99/09/08 23:30:03.00	423901.7	5087384.2	1516.3	1.5	157.5	VID_GRAB	
99/09/08 23:30:12.00	423901.7	5087384.2	1516.3	1.5	139.8	VID_GRAB	
99/09/08 23:31:56.00	423901.9	5087383.4	1516.6	1.2	167.0	VID_GRAB	
99/09/08 23:32:33.00	423900.9	5087382.9	1516.1	1.6	169.0	Extensive diffuse flow, collapse pits	
99/09/08 23:33:49.00	423899.2	5087381.7	1516.2	1.6	226.4	VID_GRAB	
99/09/08 23:33:54.00	423899.2	5087381.7	1516.1	1.6	214.7	VID_GRAB	
99/09/08 23:33:55.00	423899.2	5087381.7	1516.1	1.6	210.1	VID_GRAB	
99/09/08 23:34:11.00	423899.4	5087381.6	1516.1	1.7	174.4	Sharp gradient between area of diffuse flow and lo-bio	
99/09/08 23:34:19.00	423899.4	5087381.6	1516.1	1.6	183.4	VID_GRAB	
99/09/08 23:34:43.00	423899.6	5087379.6	1516.1	1.8	181.5	VID_GRAB	
99/09/08 23:34:45.00	423899.6	5087379.6	1516.1	1.8	181.6	VID_GRAB	
99/09/08 23:34:58.00	423899.6	5087379.6	1516.1	1.7	181.3	Big patch of worms, lots of diffuse flow	
99/09/08 23:35:21.00	423899.4	5087380.2	1516.1	1.7	181.2	Worried about blurry picture (warm water) and slime.	
99/09/08 23:35:46.00	423899.6	5087380.2	1516.1	1.7	180.9	Will look for a smaller patch for better camera quality	
99/09/08 23:35:50.00	423899.6	5087380.2	1516.1	1.7	180.9	VID_GRAB	
99/09/08 23:35:58.00	423899.6	5087380.2	1516.2	1.8	180.0	VID_GRAB	
99/09/08 23:36:17.00	423899.2	5087380.8	1516.1	1.9	180.8	VID_GRAB	
99/09/08 23:38:04.00	423897.9	5087376.4	1516.0	1.6	178.0	VID_GRAB	
99/09/08 23:38:22.00	423897.9	5087376.4	1516.0	1.4	179.7	Piece of rope -- trying to stay away	
99/09/08 23:38:28.00	423897.9	5087376.4	1516.0	1.5	179.7	VID_GRAB	
99/09/08 23:39:11.00	423895.9	5087374.2	1516.0	1.7	180.1	VID_GRAB	
99/09/08 23:39:17.00	423895.9	5087374.2	1516.1	1.7	180.9	VID_GRAB	
99/09/08 23:39:34.00	423896.1	5087372.6	1516.1	1.7	181.0	VID_GRAB	
99/09/08 23:39:57.00	423894.6	5087372.5	1516.1	1.7	161.0	VID_GRAB	
99/09/08 23:40:24.00	423895.6	5087371.9	1516.1	1.6	155.0	Small clumps of tubeworms in cracks	
99/09/08 23:41:10.00	423897.2	5087370.0	1516.3	1.5	149.9	VID_GRAB	
99/09/08 23:41:14.00	423897.2	5087370.0	1516.1	1.7	149.6	VID_GRAB	
99/09/08 23:41:27.00	423897.5	5087369.4	1515.8	1.9	149.9	VID_GRAB	
99/09/08 23:41:43.00	423897.6	5087369.9	1516.2	1.6	154.3	making this a target	
99/09/08 23:41:52.00	423897.6	5087369.9	1516.4	1.5	152.9	VID_GRAB	
99/09/08 23:42:25.00	423897.9	5087370.0	1515.8	2.0	151.2	VID_GRAB	
99/09/08 23:43:33.00	423893.8	5087367.9	1515.1	2.9	203.0	So far 3 targets, first place on edge, big clump, and current location	

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99/09/08 23:44:26.00	423892.9	5087362.8	1515.9	2.0	211.0	Targets labeled 5,6,7 in nav	
99/09/08 23:44:29.00	423892.9	5087362.8	1516.1	1.9	211.4		
99/09/08 23:44:29.00	423892.9	5087362.8	1516.2	1.8	211.4		
99/09/08 23:45:39.00	423892.6	5087363.1	1515.5	2.5	211.4	VID_GRAB	
99/09/08 23:46:55.00	423892.2	5087362.7	1515.5	2.5	211.7	Going back to target 6 to reevaluate site	
99/09/08 23:55:15.00	423895.0	5087365.3	1515.4	2.8	27.4	Now looking at a potential other site	
99/09/08 23:55:44.00	423896.0	5087366.9	1514.9	3.0	27.6	VID_GRAB	
99/09/08 23:55:55.00	423896.0	5087366.9	1515.7	2.1	24.2	VID_GRAB	
99/09/08 23:56:28.00	423894.5	5087369.0	1517.6	0.7	32.0	VID_GRAB	
99/09/08 23:56:52.00	423895.4	5087367.7	1517.7	0.7	32.3	Target 8	
99/09/08 23:57:14.00	423894.8	5087368.8	1517.7	0.7	32.8	Rope attached to an MTR	
99/09/08 23:57:23.00	423895.2	5087367.9	1517.7	0.7	32.9	Target 8 just S of MTR	
99/09/08 23:57:39.00	423895.2	5087367.9	1517.7	0.7	33.2	VID_GRAB	
99/09/08 23:57:42.00	423895.2	5087367.9	1517.7	0.7	33.2	VID_GRAB	
99/09/08 23:58:18.00	423894.6	5087368.6	1517.7	0.7	33.3	VID_GRAB	
99/09/08 23:58:47.00	423895.3	5087367.8	1517.7	0.7	33.4	Looking NE at MTR (put down in July)	
99/09/08 23:59:36.00	423895.9	5087368.0	1517.7	0.7	33.2	site 32m away from cameras present location	
99/09/09 00:01:42.00	423897.1	5087368.8	1517.9	1.6	26.3	VID_GRAB	
99/09/09 00:01:57.00	423897.1	5087368.8	1517.9	1.5	26.6	VID_GRAB	
99/09/09 00:03:03.00	423897.1	5087370.5	1517.6	0.8	26.4	VID_GRAB	
99/09/09 00:03:34.00	423895.5	5087368.5	1516.5	1.5	17.6	Going back to get camera	
99/09/09 00:04:09.00	423898.9	5087369.0	1516.4	1.7	345.9	VID_GRAB	
99/09/09 00:04:13.00	423898.9	5087369.0	1516.4	1.7	343.5	VID_GRAB	
99/09/09 00:05:06.00	423903.5	5087378.0	1515.6	2.0	354.0	VID_GRAB	
99/09/09 00:10:55.00	423905.5	5087395.2	1515.6	2.3	340.0	Back at camera instrument	
99/09/09 00:11:59.00	423904.0	5087398.5	1515.6	2.3	337.6	VID_GRAB	instrument
99/09/09 00:12:24.00	423902.3	5087403.7	1515.6	2.1	337.4	VID_GRAB	Instrument
99/09/09 00:13:23.00	423903.4	5087408.2	1515.7	2.5	336.7	VID_GRAB	brow camera
99/09/09 00:13:31.00	423903.4	5087408.2	1515.6	2.4	337.5	VID_GRAB	again
99/09/09 00:13:53.00	423903.1	5087408.5	1515.7	2.4	337.8	VID_GRAB	
99/09/09 00:14:10.00	423903.1	5087408.5	1515.5	2.5	338.5	VID_GRAB	test
99/09/09 00:14:40.00	423903.7	5087409.0	1515.1	2.7	335.4	maneuvering around camera platform	
99/09/09 00:15:00.00	423903.2	5087409.0	1515.3	2.5	338.0	attempting to snag lift line with Mk48	
99/09/09 00:15:18.00	423902.9	5087410.4	1514.8	3.3	340.1	got it	
99/09/09 00:15:26.00	423902.9	5087410.4	1514.1	3.7	337.7	VID_GRAB	
99/09/09 00:15:32.00	423902.9	5087410.4	1513.5	4.4	337.9	VID_GRAB	up
99/09/09 00:16:53.00	423898.4	5087414.6	1513.8	2.7	267.8	medea yanking jason	
99/09/09 00:16:58.00	423898.4	5087414.6	1513.9	3.9	252.8	VID_GRAB	
99/09/09 00:18:13.00	423894.8	5087411.3	1514.0	4.3	187.0	taking 20 percent thrust to keep package up	
99/09/09 00:22:45.00	423893.8	5087385.4	1514.0	4.4	169.1	VID_GRAB	medea view
99/09/09 00:23:11.00	423893.8	5087385.4	1514.0	4.5	169.5	VID_GRAB	
99/09/09 00:24:32.00	423895.8	5087380.4	1514.1	4.2	172.1	VID_GRAB	

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99/09/09 00:27:04.00	423894.8	5087366.8	1514.1	4.1	174.7	VID_GRAB	this is the target?
99/09/09 00:31:24.00	423897.7	5087370.7	1515.5	2.6	229.9	VID_GRAB	
99/09/09 00:31:45.00	423897.7	5087370.7	1513.7	4.2	228.1	Put instrument down to remove a stray rope	
99/09/09 00:32:47.00	423897.9	5087373.5	1516.0	2.0	195.4	VID_GRAB	
99/09/09 00:37:41.00	423893.3	5087367.6	1514.9	3.2	34.6	VID_GRAB	
99/09/09 00:37:49.00	423893.3	5087367.6	1515.4	2.9	35.1	VID_GRAB	
99/09/09 00:38:01.00	423893.3	5087367.6	1515.4	2.9	36.0	VID_GRAB	picking up video instrument
99/09/09 00:39:06.00	423895.3	5087369.7	1512.3	5.8	24.4	moving instrument	
99/09/09 00:40:53.00	423897.6	5087372.9	1514.8	3.3	75.2	VID_GRAB	needs to be moved 180
99/09/09 00:42:42.00	423899.3	5087373.5	1513.6	4.2	79.7	VID_GRAB	
99/09/09 00:42:44.00	423899.3	5087373.1	1513.6	4.2	79.6	VID_GRAB	
99/09/09 00:42:57.00	423899.3	5087373.1	1513.7	4.0	60.4	Readjustments	
99/09/09 00:44:48.00	423899.1	5087380.3	1511.9	6.3	124.2	VID_GRAB	
99/09/09 00:45:07.00	423899.8	5087378.7	1512.9	5.2	93.7	Trying to spin instrument 180. Moving slightly off target	
99/09/09 00:48:48.00	423894.2	5087391.0	1513.5	4.8	292.7	VID_GRAB	
99/09/09 00:50:20.00	423894.8	5087388.6	1512.6	5.8	299.6	Still spinning instrument	
99/09/09 00:53:34.00	423899.4	5087376.0	1514.7	3.3	323.2	VID_GRAB	
99/09/09 00:53:42.00	423899.7	5087372.8	1515.2	2.5	337.0	VID_GRAB	instrument on bottom
99/09/09 00:55:56.00	423896.4	5087376.4	1518.3	30.0	127.9	VID_GRAB	
99/09/09 00:55:57.00	423896.4	5087376.4	1518.2	30.0	129.4	VID_GRAB	
99/09/09 00:56:12.00	423896.4	5087376.4	1518.3	30.0	126.5	Still working on readjusting instrument position	
99/09/09 00:57:47.00	423895.6	5087381.0	1516.0	2.4	105.5	VID_GRAB	
99/09/09 00:58:14.00	423897.9	5087378.4	1515.6	2.7	140.8	VID_GRAB	
99/09/09 00:58:31.00	423897.9	5087378.4	1515.8	2.1	151.6	VID_GRAB	
99/09/09 01:00:05.00	423899.2	5087371.2	1512.6	5.1	155.7	VID_GRAB	
99/09/09 01:00:34.00	423901.6	5087374.4	1515.1	3.0	208.8	VID_GRAB	
99/09/09 01:00:56.00	423901.6	5087374.4	1516.6	1.6	204.3	VID_GRAB	can see laser in center right
99/09/09 01:02:14.00	423901.5	5087372.6	1518.1	30.0	199.3	VID_GRAB	
99/09/09 01:03:42.00	423902.3	5087373.5	1518.1	30.0	198.5	VID_GRAB	
99/09/09 01:05:11.00	423901.5	5087373.6	1517.6	0.8	215.2	VID_GRAB	
99/09/09 01:05:15.00	423901.5	5087373.6	1517.5	0.7	223.3	VID_GRAB	
99/09/09 01:06:27.00	423901.4	5087369.2	1517.9	30.0	233.3	VID_GRAB	
99/09/09 01:07:22.00	423901.3	5087371.0	1517.8	1.0	232.0	VID_GRAB	
99/09/09 01:08:06.00	423902.1	5087369.3	1517.9	1.5	214.7	VID_GRAB	
99/09/09 01:08:18.00	423902.1	5087369.3	1518.0	30.0	212.3	VID_GRAB	still adjusting position
99/09/09 01:09:44.00	423906.1	5087377.6	1518.0	30.0	257.9	VID_GRAB	
99/09/09 01:10:55.00	423902.0	5087370.4	1517.9	1.4	252.5	VID_GRAB	
99/09/09 01:11:03.00	423902.3	5087372.5	1517.9	0.7	252.4	VID_GRAB	
99/09/09 01:11:20.00	423902.3	5087372.5	1518.0	0.7	251.8	VID_GRAB	

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99/09/09 01:13:51.00	423900.7	5087371.9	1518.1	30.0	257.1	VID_GRAB	
99/09/09 01:14:01.00	423900.7	5087371.9	1518.1	1.5	257.0	VID_GRAB	looking for laser
99/09/09 01:15:06.00	423902.1	5087371.7	1516.7	1.7	251.6	VID_GRAB	
99/09/09 01:15:09.00	423902.1	5087371.7	1516.6	1.6	250.8	VID_GRAB	
99/09/09 01:15:25.00	423902.1	5087371.7	1516.3	1.9	251.5	VID_GRAB	
99/09/09 01:16:52.00	423902.7	5087370.0	1518.0	30.0	258.1	VID_GRAB	
99/09/09 01:17:50.00	423902.2	5087372.6	1518.0	1.2	229.0	VID_GRAB	lasers now on base of tubeworm clump
99/09/09 01:19:26.00	423897.6	5087374.4	1516.0	2.0	159.4	VID_GRAB	
99/09/09 01:19:35.00	423897.6	5087374.4	1515.7	2.2	158.5	VID_GRAB	
99/09/09 01:20:03.00	423896.2	5087375.6	1515.4	2.8	148.2	VID_GRAB	
99/09/09 01:21:35.00	423895.3	5087372.6	1515.5	2.5	87.5	VID_GRAB	
99/09/09 01:23:52.00	423898.5	5087370.5	1518.2	0.7	62.9	VID_GRAB	
99/09/09 01:24:19.00	423898.5	5087370.5	1518.2	0.7	62.5	VID_GRAB	laser now right in tubeworms. Checking slope
99/09/09 01:24:49.00	423898.8	5087370.0	1516.5	1.7	60.9	VID_GRAB	
99/09/09 01:25:01.00	423898.8	5087370.0	1516.4	1.7	56.4	VID_GRAB	
99/09/09 01:25:02.00	423898.3	5087367.7	1516.4	1.6	56.2	VID_GRAB	
99/09/09 01:25:11.00	423898.3	5087367.7	1516.5	1.5	51.7	VID_GRAB	checking slope
99/09/09 01:25:29.00	423898.5	5087368.8	1516.3	1.9	42.4	VID_GRAB	
99/09/09 01:25:31.00	423898.5	5087368.8	1516.2	1.9	43.2	VID_GRAB	
99/09/09 01:25:34.00	423898.5	5087368.8	1516.1	2.0	36.7	VID_GRAB	
99/09/09 01:25:35.00	423898.5	5087368.8	1516.1	2.1	37.0	VID_GRAB	
99/09/09 01:25:47.00	423900.8	5087368.8	1516.0	2.2	17.3	VID_GRAB	
99/09/09 01:26:31.00	423900.0	5087368.2	1515.7	2.4	300.0	VID_GRAB	
99/09/09 01:26:35.00	423900.0	5087368.2	1515.7	2.4	301.7	VID_GRAB	
99/09/09 01:26:42.00	423902.9	5087369.2	1515.6	2.5	294.6	VID_GRAB	position is looking good
99/09/09 01:27:22.00	423900.8	5087372.6	1516.8	1.6	244.6	VID_GRAB	
99/09/09 01:27:28.00	423900.8	5087372.6	1516.8	1.5	244.2	VID_GRAB	
99/09/09 01:27:48.00	423901.8	5087371.6	1517.3	1.0	241.8		
99/09/09 01:28:22.00	423901.8	5087371.6	1517.7	0.9	235.2	VID_GRAB	
99/09/09 01:28:27.00	423901.8	5087371.6	1517.7	0.7	231.7	VID_GRAB	
99/09/09 01:28:39.00	423901.8	5087371.6	1517.5	0.8	223.0	VID_GRAB	
99/09/09 01:28:42.00	423901.8	5087371.6	1517.6	0.7	222.8	VID_GRAB	
99/09/09 01:28:45.00	423901.0	5087373.4	1517.3	0.9	222.8	VID_GRAB	
99/09/09 01:28:55.00	423901.0	5087373.4	1517.1	0.8	215.7	VID_GRAB	
99/09/09 01:29:08.00	423900.2	5087376.7	1517.3	1.1	190.1	VID_GRAB	
99/09/09 01:29:10.00	423900.2	5087376.7	1517.3	1.1	189.1	VID_GRAB	
99/09/09 01:29:11.00	423900.2	5087376.7	1517.3	1.2	187.7	VID_GRAB	
99/09/09 01:29:38.00	423897.6	5087373.8	1517.8	30.0	158.8	423903 5087370 location of camera	
99/09/09 01:30:04.00	423898.2	5087373.1	1517.9	30.0	153.8	VID_GRAB	
99/09/09 01:30:07.00	423898.2	5087373.1	1517.9	30.0	153.8	VID_GRAB	
99/09/09 01:30:10.00	423898.2	5087373.1	1517.9	11.6	153.8	VID_GRAB	
99/09/09 01:30:19.00	423898.2	5087373.1	1517.9	30.0	153.8	VID_GRAB	laser pointing right at tubeworms

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99/09/09 01:30:27.00	423898.6	5087371.8	1517.9	1.7	153.8	VID_GRAB	
99/09/09 01:30:31.00	423898.6	5087371.8	1517.9	1.6	153.8	VID_GRAB	
99/09/09 01:30:44.00	423898.0	5087371.4	1517.9	1.6	153.8	VID_GRAB	
99/09/09 01:30:48.00	423898.0	5087371.4	1517.9	30.0	153.8	VID_GRAB	
99/09/09 01:30:57.00	423898.0	5087371.4	1517.9	1.7	153.8	VID_GRAB	
99/09/09 01:31:11.00	423897.6	5087373.4	1517.9	30.0	153.7	VID_GRAB	
99/09/09 01:31:13.00	423897.6	5087373.4	1517.9	30.0	153.7	VID_GRAB	
99/09/09 01:31:19.00	423897.6	5087373.4	1517.9	30.0	153.7	VID_GRAB	
99/09/09 01:31:26.00	423898.7	5087372.3	1517.9	30.0	153.7	VID_GRAB	
99/09/09 01:31:52.00	423898.3	5087372.3	1517.5	0.7	152.0	VID_GRAB	
99/09/09 01:31:55.00	423898.3	5087372.3	1517.4	0.9	146.6	VID_GRAB	
99/09/09 01:32:00.00	423898.3	5087372.3	1517.4	0.8	136.5	VID_GRAB	
99/09/09 01:32:03.00	423897.9	5087372.5	1517.4	0.9	128.7	VID_GRAB	
99/09/09 01:32:07.00	423897.9	5087372.5	1517.4	0.7	110.4	VID_GRAB	
99/09/09 01:32:23.00	423897.0	5087370.8	1517.6	1.8	73.9	VID_GRAB	
99/09/09 01:32:24.00	423897.0	5087370.8	1517.6	0.8	72.2	VID_GRAB	
99/09/09 01:32:30.00	423897.0	5087370.8	1517.5	0.8	58.7	VID_GRAB	
99/09/09 01:32:40.00	423897.0	5087370.8	1517.7	1.0	54.0	VID_GRAB	
99/09/09 01:32:49.00	423898.1	5087369.3	1517.8	0.9	46.3	VID_GRAB	
99/09/09 01:32:58.00	423898.1	5087369.3	1518.2	30.0	45.7	VID_GRAB	
99/09/09 01:33:02.00	423898.1	5087369.3	1518.2	30.0	45.9	VID_GRAB	
99/09/09 01:33:04.00	423898.1	5087369.3	1518.2	30.0	45.9	VID_GRAB	
99/09/09 01:33:05.00	423898.1	5087369.3	1518.2	30.0	45.9	VID_GRAB	
99/09/09 01:34:23.00	423897.6	5087369.7	1518.2	30.0	45.7	VID_GRAB	
99/09/09 01:34:28.00	423897.6	5087369.7	1518.2	30.0	45.7	VID_GRAB	
99/09/09 01:35:02.00	423895.2	5087371.2	1518.2	30.0	46.0	VID_GRAB	
99/09/09 01:35:17.00	423895.2	5087371.2	1518.2	26.7	46.1	VID_GRAB	people not happy with this location, too much water in shot
99/09/09 01:35:35.00	423897.9	5087369.8	1518.0	1.0	46.4	looking like we're going to move instrument again	
99/09/09 01:36:05.00	423898.0	5087368.2	1516.1	2.2	17.2	VID_GRAB	
99/09/09 01:36:07.00	423898.0	5087368.2	1516.0	2.3	17.6	VID_GRAB	
99/09/09 01:36:12.00	423898.0	5087368.2	1515.4	2.7	25.2	VID_GRAB	
99/09/09 01:36:21.00	423898.0	5087368.2	1515.6	2.8	29.3	VID_GRAB	
99/09/09 01:36:23.00	423902.4	5087373.5	1515.5	2.7	32.4	VID_GRAB	
99/09/09 01:36:24.00	423902.4	5087373.5	1515.4	2.7	32.4	VID_GRAB	
99/09/09 01:36:26.00	423902.4	5087373.5	1515.4	2.6	35.9	VID_GRAB	
99/09/09 01:36:28.00	423902.4	5087373.5	1515.6	2.4	37.9	VID_GRAB	
99/09/09 01:36:31.00	423902.4	5087373.5	1515.9	2.1	41.0	VID_GRAB	
99/09/09 01:36:33.00	423902.4	5087373.5	1516.0	2.1	42.6	VID_GRAB	
99/09/09 01:36:34.00	423902.4	5087373.5	1516.0	2.2	43.9	VID_GRAB	
99/09/09 01:36:35.00	423902.4	5087373.5	1515.9	2.4	46.0	VID_GRAB	
99/09/09 01:36:37.00	423902.4	5087373.5	1515.9	2.5	49.2	VID_GRAB	
99/09/09 01:36:38.00	423902.4	5087373.5	1515.9	2.5	51.3	VID_GRAB	
99/09/09 01:36:40.00	423902.4	5087373.5	1516.0	2.3	52.6	VID_GRAB	
99/09/09 01:36:42.00	423902.4	5087373.5	1516.1	2.3	54.2	VID_GRAB	
99/09/09 01:36:44.00	423897.0	5087368.3	1516.2	2.0	56.7	VID_GRAB	

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99/09/09 01:36:45.00	423897.0	5087368.3	1516.3	1.9	58.6	VID_GRAB	
99/09/09 01:36:47.00	423897.0	5087368.3	1516.3	1.9	57.9	VID_GRAB	
99/09/09 01:36:49.00	423897.0	5087368.3	1516.3	1.8	61.3	VID_GRAB	
99/09/09 01:37:17.00	423897.0	5087368.3	1518.1	1.6	51.3	VID_GRAB	
99/09/09 01:37:26.00	423897.0	5087368.3	1518.1	1.5	51.4	VID_GRAB	proposed site
99/09/09 01:37:39.00	423897.0	5087368.3	1518.1	1.6	51.3	VID_GRAB	
99/09/09 01:37:52.00	423896.7	5087370.5	1518.1	1.4	52.0	VID_GRAB	Moving instrument to be facing NE
99/09/09 01:38:23.00	423898.3	5087368.6	1517.3	1.1	40.3	VID_GRAB	
99/09/09 01:38:51.00	423897.4	5087369.5	1517.2	1.1	39.6	VID_GRAB	Moving the instrument to the other side of the tubeworm patch
99/09/09 01:39:27.00	423899.7	5087367.8	1518.1	30.0	40.9	VID_GRAB	
99/09/09 01:39:38.00	423899.7	5087367.8	1518.0	30.0	40.8	VID_GRAB	going to try to move by holding onto bar
99/09/09 01:39:53.00	423898.9	5087368.3	1517.9	0.8	41.2	VID_GRAB	
99/09/09 01:40:09.00	423898.9	5087368.3	1517.5	0.9	42.1	VID_GRAB	
99/09/09 01:40:14.00	423898.9	5087368.3	1517.2	1.0	38.2	VID_GRAB	
99/09/09 01:43:34.00	423899.2	5087369.2	1518.2	30.0	25.0	VID_GRAB	
99/09/09 01:43:45.00	423898.4	5087370.4	1518.2	30.0	25.0	VID_GRAB	
99/09/09 01:45:41.00	423900.8	5087370.1	1515.2	3.1	352.6	VID_GRAB	
99/09/09 01:45:55.00	423900.0	5087370.8	1514.6	3.6	335.9	VID_GRAB	moving using the line
99/09/09 01:47:49.00	423900.0	5087368.9	1515.2	2.5	0.1	VID_GRAB	
99/09/09 01:48:03.00	423898.3	5087367.4	1515.4	2.9	12.8	VID_GRAB	
99/09/09 01:48:39.00	423898.3	5087367.4	1516.8	1.4	40.5	VID_GRAB	
99/09/09 01:48:54.00	423897.2	5087367.0	1517.3	1.3	37.6	VID_GRAB	
99/09/09 01:49:04.00	423897.1	5087368.8	1517.9	0.8	39.5	VID_GRAB	
99/09/09 01:49:09.00	423897.1	5087368.8	1517.9	0.7	47.8	VID_GRAB	
99/09/09 01:49:31.00	423896.5	5087368.8	1518.2	1.5	45.0	VID_GRAB	
99/09/09 01:50:27.00	423897.0	5087367.7	1517.8	0.8	355.0	VID_GRAB	
99/09/09 01:51:30.00	423899.0	5087365.4	1518.2	1.5	337.4	VID_GRAB	moving into new position
99/09/09 01:53:03.00	423900.7	5087366.4	1518.1	1.5	331.3	VID_GRAB	
99/09/09 01:53:11.00	423900.7	5087366.4	1518.1	1.7	331.0	VID_GRAB	
99/09/09 01:54:35.00	423899.9	5087367.0	1518.0	0.8	40.0	VID_GRAB	
99/09/09 01:56:16.00	423897.1	5087368.6	1518.2	30.0	54.4	VID_GRAB	
99/09/09 01:58:00.00	423899.8	5087367.9	1514.9	3.2	122.5	VID_GRAB	
99/09/09 01:59:27.00	423897.5	5087367.4	1508.7	9.3	346.5	VID_GRAB	rotating instrument
99/09/09 02:01:41.00	423905.2	5087375.0	1516.4	2.0	196.0	VID_GRAB	
99/09/09 02:01:41.00	423905.2	5087375.0	1516.2	2.1	196.0	VID_GRAB	
99/09/09 02:02:12.00	423907.3	5087376.1	1515.0	3.3	240.4	VID_GRAB	
99/09/09 02:04:04.00	423914.6	5087370.8	1514.6	3.9	279.9	VID_GRAB	
99/09/09 02:04:07.00	423914.6	5087370.8	1514.8	3.7	286.4	VID_GRAB	
99/09/09 02:04:16.00	423914.6	5087370.8	1515.3	3.2	288.9	VID_GRAB	

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99/09/09 02:06:28.00	423910.2	5087370.8	1514.3	4.3	282.5	VID_GRAB	
99/09/09 02:06:37.00	423910.2	5087370.8	1515.0	3.5	287.6	VID_GRAB	
99/09/09 02:06:46.00	423911.2	5087374.4	1514.3	4.2	287.6	VID_GRAB	
99/09/09 02:11:31.00	423900.9	5087372.7	1511.0	2.5	246.3	VID_GRAB	
99/09/09 02:14:13.00	423905.6	5087373.3	1514.8	3.5	254.3	VID_GRAB	
99/09/09 02:14:22.00	423903.6	5087370.8	1515.7	2.5	275.3	VID_GRAB	
99/09/09 02:15:57.00	423896.6	5087368.2	1516.6	1.5	353.8	VID_GRAB	
99/09/09 02:16:05.00	423898.6	5087376.8	1516.5	1.6	2.7	VID_GRAB	
99/09/09 02:16:13.00	423898.6	5087376.8	1516.3	2.3	9.0	VID_GRAB	
99/09/09 02:19:55.00	423894.8	5087371.7	1514.2	4.2	89.2	VID_GRAB	
99/09/09 02:22:51.00	423896.3	5087369.2	1518.3	1.9	350.0	START TAPES	
99/09/09 02:23:52.00	423897.1	5087370.3	1518.4	30.0	350.8	VID_GRAB	
99/09/09 02:24:09.00	423895.7	5087369.2	1518.4	30.0	350.7	VID_GRAB	
99/09/09 02:25:36.00	423895.5	5087370.5	1518.2	30.0	5.7	VID_GRAB	
99/09/09 02:27:28.00	423896.7	5087376.2	1517.4	1.3	353.0	VID_GRAB	
99/09/09 02:27:28.00	423896.7	5087376.2	1517.3	1.4	352.7	VID_GRAB	
99/09/09 02:27:31.00	423896.7	5087376.2	1517.1	1.7	349.9	VID_GRAB	
99/09/09 02:27:35.00	423896.7	5087376.2	1516.7	1.8	350.9	VID_GRAB	
99/09/09 02:28:39.00	423898.1	5087367.2	1515.4	2.9	10.3	VID_GRAB	
99/09/09 02:28:41.00	423898.1	5087367.2	1515.4	2.9	12.5	VID_GRAB	
99/09/09 02:28:44.00	423897.0	5087366.7	1515.4	3.0	18.4	VID_GRAB	
99/09/09 02:29:05.00	423895.4	5087370.6	1516.1	2.2	45.0	still orienting at new site	
99/09/09 02:29:22.00	423892.6	5087372.1	1516.3	2.1	70.7	VID_GRAB	
99/09/09 02:29:23.00	423892.6	5087372.1	1516.3	2.1	73.0	VID_GRAB	
99/09/09 02:29:26.00	423892.6	5087372.1	1516.3	2.3	79.6	VID_GRAB	
99/09/09 02:29:31.00	423892.6	5087372.1	1516.4	2.0	82.6	VID_GRAB	
99/09/09 02:29:31.00	423892.6	5087372.1	1516.5	2.0	83.9	VID_GRAB	
99/09/09 02:29:33.00	423892.6	5087372.1	1516.6	1.9	86.2	VID_GRAB	
99/09/09 02:29:36.00	423892.6	5087372.1	1516.8	1.5	98.4	VID_GRAB	
99/09/09 02:29:42.00	423891.7	5087369.0	1516.9	1.4	109.8	VID_GRAB	
99/09/09 02:29:47.00	423891.7	5087369.0	1517.3	1.2	109.8	VID_GRAB	
99/09/09 02:30:27.00	423894.1	5087373.9	1516.5	2.1	103.0	VID_GRAB	
99/09/09 02:30:31.00	423894.1	5087373.9	1516.4	2.2	105.3	VID_GRAB	
99/09/09 02:30:38.00	423894.1	5087373.9	1516.4	2.0	114.7	090 camera heading	
99/09/09 02:31:21.00	423894.7	5087374.3	1516.3	2.0	162.3	VID_GRAB	
99/09/09 02:31:25.00	423896.4	5087375.5	1516.2	1.9	168.0	VID_GRAB	
99/09/09 02:32:10.00	423897.6	5087375.9	1516.3	1.7	197.4	VID_GRAB	
99/09/09 02:32:11.00	423897.6	5087375.9	1516.3	1.7	196.9	VID_GRAB	
99/09/09 02:32:13.00	423897.6	5087375.9	1516.4	1.6	196.5	VID_GRAB	
99/09/09 02:32:16.00	423897.6	5087375.9	1516.5	1.8	197.4	VID_GRAB	
99/09/09 02:32:18.00	423897.6	5087375.9	1516.4	1.9	199.0	VID_GRAB	
99/09/09 02:32:20.00	423897.6	5087375.9	1516.2	2.2	203.6	VID_GRAB	
99/09/09 02:32:23.00	423897.5	5087375.0	1516.1	2.3	204.3	VID_GRAB	
99/09/09 02:32:26.00	423897.5	5087375.0	1516.0	2.2	213.4	VID_GRAB	
99/09/09 02:32:29.00	423897.5	5087375.0	1515.9	2.2	217.1	VID_GRAB	
99/09/09 02:32:34.00	423897.5	5087375.0	1515.8	2.5	226.3	VID_GRAB	
99/09/09 02:32:36.00	423897.5	5087375.0	1515.8	2.5	227.2	VID_GRAB	
99/09/09 02:32:41.00	423897.5	5087375.0	1515.7	2.4	231.4	VID_GRAB	
99/09/09 02:32:42.00	423897.5	5087375.0	1515.7	2.5	231.5	VID_GRAB	
99/09/09 02:32:46.00	423897.5	5087375.0	1515.6	2.8	241.4	VID_GRAB	

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99/09/09 02:32:50.00	423897.5	5087375.0	1515.6	2.9	249.8	VID_GRAB	
99/09/09 02:32:53.00	423897.5	5087375.0	1515.4	2.9	255.5	VID_GRAB	
99/09/09 02:32:55.00	423897.5	5087375.0	1515.4	3.0	256.8	VID_GRAB	
99/09/09 02:33:00.00	423897.5	5087375.0	1515.5	2.7	258.5	VID_GRAB	
99/09/09 02:33:08.00	423900.6	5087371.9	1515.5	2.7	267.1	VID_GRAB	
99/09/09 02:33:21.00	423900.6	5087371.9	1515.7	2.5	278.8	VID_GRAB	
99/09/09 02:33:23.00	423900.6	5087371.9	1515.8	2.3	278.6	VID_GRAB	
99/09/09 02:33:31.00	423900.6	5087371.9	1516.9	1.4	279.7	VID_GRAB	
99/09/09 02:33:36.00	423900.6	5087371.9	1516.8	1.5	278.9	VID_GRAB	
99/09/09 02:33:48.00	423901.2	5087369.3	1517.9	0.7	278.2	VID_GRAB	
99/09/09 02:33:53.00	423901.2	5087369.3	1518.0	0.7	278.9	VID_GRAB	
99/09/09 02:34:00.00	423901.2	5087369.3	1518.2	30.0	277.1	VID_GRAB	
99/09/09 02:34:02.00	423899.7	5087370.5	1518.2	8.8	277.1	VID_GRAB	
99/09/09 02:34:17.00	423899.7	5087370.5	1518.2	30.0	277.0	VID_GRAB	
99/09/09 02:34:19.00	423899.7	5087370.5	1518.2	30.0	277.0	VID_GRAB	
99/09/09 02:34:27.00	423902.2	5087374.6	1518.2	30.0	277.0	VID_GRAB	
99/09/09 02:35:07.00	423903.2	5087365.0	1517.8	0.7	310.1	VID_GRAB	
99/09/09 02:35:40.00	423899.3	5087369.3	1517.1	1.5	353.6		
99/09/09 02:35:42.00	423899.3	5087369.3	1517.1	1.4	357.6		
99/09/09 02:36:04.00	423896.9	5087369.3	1518.4	30.0	10.4	Going to tilt camera down slightly	
99/09/09 02:36:20.00	423896.9	5087369.3	1518.4	30.0	10.2	VID_GRAB	
99/09/09 02:37:22.00	423897.1	5087370.4	1518.4	30.0	10.0	VID_GRAB	
99/09/09 02:37:36.00	423896.8	5087370.6	1518.0	0.7	11.3	VID_GRAB	
99/09/09 02:38:09.00	423897.0	5087369.1	1516.4	2.1	11.3	VID_GRAB	
99/09/09 02:38:19.00	423897.0	5087369.1	1516.5	1.8	9.5	VID_GRAB	nudging down camera
99/09/09 02:38:24.00	423897.4	5087371.7	1516.6	1.8	10.6	VID_GRAB	
99/09/09 02:38:32.00	423897.4	5087371.7	1516.9	1.6	11.7	VID_GRAB	
99/09/09 02:38:42.00	423896.6	5087371.0	1517.0	1.4	2.1	VID_GRAB	
99/09/09 02:38:45.00	423896.6	5087371.0	1516.9	1.6	358.7	VID_GRAB	
99/09/09 02:39:01.00	423896.6	5087371.0	1516.8	1.8	5.9	VID_GRAB	
99/09/09 02:39:05.00	423897.0	5087370.3	1516.8	1.8	5.4	VID_GRAB	
99/09/09 02:39:17.00	423897.0	5087370.3	1516.8	1.6	13.4	VID_GRAB	
99/09/09 02:39:30.00	423897.6	5087370.2	1517.8	1.0	19.8	VID_GRAB	
99/09/09 02:40:13.00	423897.7	5087368.9	1518.5	0.9	19.8	3898 7370 final position of instrument, camera angle 090	
99/09/09 02:40:22.00	423897.7	5087368.9	1518.5	1.8	19.4	VID_GRAB	
99/09/09 02:41:30.00	423897.4	5087369.3	1518.2	0.7	20.1	Everyone happy with instrument position	
99/09/09 02:42:53.00	423900.4	5087372.6	1518.3	30.0	288.6	VID_GRAB	
99/09/09 02:42:56.00	423900.4	5087372.6	1518.3	30.0	288.6	VID_GRAB	
99/09/09 02:43:19.00	423901.0	5087373.4	1518.3	30.0	288.5	VID_GRAB	
99/09/09 02:45:43.00	423902.0	5087372.7	1518.4	30.0	288.8	VID_GRAB	final resting place for camera
99/09/09 02:54:44.00	423897.9	5087372.8	1518.3	30.0	216.2	Trying to position 2 temp probes in the tubeworm clump	

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99/09/09 02:57:05.00	423897.8	5087371.8	1518.3	17.9	215.2	VID_GRAB	positioning temp probe
99/09/09 02:59:40.00	423900.5	5087370.5	1518.4	1.6	217.3	VID_GRAB	tworms
99/09/09 03:00:33.00	423900.2	5087371.1	1518.4	1.5	217.1	VID_GRAB	tprobe in tube worm bush
99/09/09 03:01:12.00	423899.2	5087371.5	1518.1	1.0	220.2	VID_GRAB	Temp probe T1 (same as previous 3 frame grabs)
99/09/09 03:02:14.00	423899.2	5087370.6	1518.4	1.5	258.2	VID_GRAB	position of T1 in worm bush
99/09/09 03:02:22.00	423898.9	5087369.5	1518.3	30.0	258.5	VID_GRAB	closeup of T1
99/09/09 03:03:15.00	423900.4	5087370.9	1518.3	1.5	258.2	VID_GRAB	Camera positioned cool shot!
99/09/09 03:03:49.00	423900.4	5087369.9	1518.0	1.5	259.5	testing	
99/09/09 03:09:14.00	423898.3	5087371.6	1517.1	1.4	202.9	VID_GRAB	Preparing to deploy T2? (second temp probe to be deployed near camera)
99/09/09 03:11:28.00	423897.5	5087369.9	1518.8	30.0	358.7	VID_GRAB	Deploying T2
99/09/09 03:12:06.00	423896.8	5087369.2	1518.8	30.0	358.5	VID_GRAB	T2 deployment
99/09/09 03:14:11.00	423897.8	5087368.6	1518.8	30.0	357.6	waiting to see what temperatures we get topside from the two probes we've positioned	
99/09/09 03:14:53.00	423897.0	5087369.1	1518.8	30.0	356.4	T2=16 T1=10 ambient=2.5	
99/09/09 03:15:22.00	423897.4	5087369.3	1518.5	0.7	358.7	going to do frame grab survey around the camera	
99/09/09 03:15:45.00	423896.7	5087370.9	1518.5	30.0	0.2	VID_GRAB	temp probe
99/09/09 03:16:08.00	423896.7	5087370.9	1517.7	1.1	0.6	VID_GRAB	
99/09/09 03:16:34.00	423897.4	5087370.3	1516.8	2.0	5.6	VID_GRAB	zoomed out
99/09/09 03:16:52.00	423897.4	5087370.3	1517.1	1.9	5.9	VID_GRAB	camera on left, temp probes on right
99/09/09 03:18:13.00	423899.2	5087375.4	1518.8	1.6	4.6	moving T2 to other side of tubeworm clump	
99/09/09 03:19:45.00	423896.2	5087370.1	1518.8	1.5	4.6	VID_GRAB	Deploying T2 in new position
99/09/09 03:19:55.00	423896.2	5087370.1	1518.8	1.6	4.5	VID_GRAB	pushing T2 in
99/09/09 03:21:07.00	423896.8	5087369.5	1518.8	1.4	4.8	VID_GRAB	T2 at rest
99/09/09 03:21:28.00	423896.8	5087369.2	1518.8	1.6	4.6	VID_GRAB	
99/09/09 03:21:37.00	423896.8	5087369.2	1518.8	1.9	4.7	T2=16	
99/09/09 03:21:59.00	423897.3	5087369.2	1518.6	0.7	6.4	Starting to move around the camera and probes	
99/09/09 03:22:27.00	423896.7	5087368.6	1517.8	1.2	4.0	VID_GRAB, camera and wires	
99/09/09 03:22:48.00	423896.7	5087368.7	1516.9	2.1	3.0	VID_GRAB	

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99/09/09 03:23:00.00	423896.7	5087368.7	1517.2	1.5	353.7	VID_GRAB	camera
99/09/09 03:23:10.00	423897.1	5087368.3	1517.2	1.6	353.2	VID_GRAB	camera for bob
99/09/09 03:23:41.00	423897.9	5087367.1	1517.1	1.7	328.3	VID_GRAB	camera and tubeworms
99/09/09 03:23:47.00	423899.3	5087367.6	1517.2	1.7	330.1	VID_GRAB	
99/09/09 03:24:00.00	423899.3	5087367.6	1517.1	1.8	321.8	VID_GRAB	
99/09/09 03:24:31.00	423901.3	5087368.0	1517.1	1.8	321.3	VID_GRAB	looking at camera and tubeworms
99/09/09 03:26:47.00	423901.5	5087368.5	1517.1	1.8	321.0	VID_GRAB	camera flash
99/09/09 03:27:06.00	423899.1	5087369.8	1517.1	1.8	321.0	noticed only one flash (should be two?)	
99/09/09 03:28:56.00	423900.7	5087368.8	1517.1	1.8	321.1	It's OK, there are 2 lights, but only one at a time. They alternate.	
99/09/09 03:30:02.00	423899.8	5087370.1	1517.1	1.7	303.3	VID_GRAB	
99/09/09 03:30:09.00	423899.8	5087370.1	1517.1	1.6	287.5	moving around it	
99/09/09 03:30:29.00	423901.0	5087369.9	1517.1	1.8	252.9	VID_GRAB	
99/09/09 03:30:47.00	423900.8	5087372.0	1517.2	1.6	253.2	VID_GRAB	
99/09/09 03:31:42.00	423900.3	5087371.2	1516.8	2.0	252.6	VID_GRAB	changed cameras. Down looking camera now
99/09/09 03:32:04.00	423900.9	5087374.2	1515.7	3.0	211.5	VID_GRAB	
99/09/09 03:32:44.00	423898.8	5087371.7	1515.8	2.7	199.3	VID_GRAB	camera and laser to right
99/09/09 03:34:50.00	423898.3	5087372.1	1515.8	2.7	199.3	423897.9 5087372 Good position for the camera (within 5 to 10 meters) actually the position of the transducer on Jason	
99/09/09 03:34:58.00	423898.3	5087372.1	1515.8	2.7	199.4	VID_GRAB	
99/09/09 03:39:09.00	423898.4	5087372.0	1515.9	2.7	199.4	VID_GRAB	
99/09/09 03:40:09.00	423898.4	5087372.0	1515.9	2.7	199.4	turned Jason's lights out	
99/09/09 03:47:34.00	423898.4	5087372.0	1515.8	2.8	199.4	VID_GRAB	
99/09/09 03:51:33.00	423898.7	5087372.1	1515.9	2.8	199.3	VID_GRAB	last look at the camera
99/09/09 03:51:48.00	423898.0	5087371.5	1515.9	2.8	273.1	heading east to start imagenex line	
99/09/09 04:07:17.00	423961.7	5087389.5	1515.8	5.2	92.4	We got worms on the tile!!!!! (quote from Bob)	
99/09/09 04:09:41.00	423979.6	5087389.6	1515.8	6.0	92.7	Still heading to SOL. Transducer out of the water.	
99/09/09 04:20:18.00	424010.6	5087376.4	1495.3	25.9	92.7	Imagenex turned on. 25m altitude	
99/09/09 04:28:02.00	424020.6	5087396.7	1495.4	25.8	0.9	Imagenexing. We will be heading north on line 23 (eastern edge of Imagenex coverage at upper SRZ)	

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99/09/09 04:31:03.00	424020.7	5087432.7	1495.4	25.5	1.0	Tapes are full. Will not be recording video for Imagenex survey (too high off the bottom)	
99/09/09 04:37:08.00	424013.6	5087511.9	1495.4	24.6	0.9	Heading north on Line23	
99/09/09 05:30:55.00	423964.3	5088157.2	1495.6	22.6	274.4	heading west on zig to line24	
99/09/09 05:39:28.00	423919.2	5088163.0	1495.8	23.2	338.8	SOL 24	
99/09/09 06:46:04.00	423926.7	5089096.3	1493.1	24.6	350.2	EOL 24, zagging over to line25	
99/09/09 06:59:29.00	423970.9	5089102.1	1492.9	25.0	163.3	SOL 25, heading south	
99/09/09 08:15:25.00	423971.8	5088161.9	1493.6	25.1	197.3	EOL 25, zagging over to line26	
99/09/09 08:36:40.00	424121.3	5088159.1	1493.2	24.5	92.9	SOL 26, heading south	
99/09/09 09:37:46.00	424115.1	5087402.6	1495.9	25.3	171.7	EOL 26, zagging to line20	
99/09/09 09:42:05.00	424068.0	5086455.9	1495.8	25.2	88.0	Switching baselines to transponders 9.5 and 7.5	
99/09/09 09:45:22.00	424068.0	5086455.9	1495.7	25.2	92.6	nav bad, Craig shifting baselines, huge jump	
99/09/09 09:54:36.00	424198.9	5087394.7	1492.1	28.7	203.0	SOL 20, unsure of nav quality	
99/09/09 09:55:28.00	424198.4	5087394.1	1492.2	28.6	119.3	Good nav	
99/09/09 10:22:18.00	424203.7	5087070.5	1496.2	25.8	185.6	Unknown marker/float ahead on tether	
99/09/09 10:36:34.00	424207.2	5086864.4	1496.3	26.2	169.0	EOL 20, jog east to line21	
99/09/09 10:56:43.00	424276.4	5086800.9	1497.5	26.1	179.5	SOL 21, heading south	
99/09/09 10:57:25.00	424276.5	5086789.7	1497.3	26.6	196.1	We've been on this line for approx. 5 min.	
99/09/09 11:17:01.00	424282.2	5086513.9	1502.6	24.7	214.9	EOL 21, jogging west to line 22	
99/09/09 11:21:59.00	424258.6	5086493.8	1502.6	25.0	216.9	Weather may be approaching, winds gusting to 30	
99/09/09 11:22:09.00	424253.7	5086494.3	1502.7	24.9	215.5	Deciding what to do	
99/09/09 11:31:38.00	424203.6	5086460.3	1502.6	25.1	206.8	SOL 22, heading south	
99/09/09 12:12:17.00	424198.5	5085990.5	1502.7	24.6	103.7	EOL 22, will begin to head east for turn to line 27	
99/09/09 12:14:49.00	424200.0	5085983.3	1502.6	26.1	88.2	Beginning east jog to line 27	
99/09/09 12:24:35.00	424235.6	5085969.3	1502.5	26.6	78.5	Messy turn, we swung south of target, still continuing jog to east	
99/09/09 12:35:51.00	424267.0	5086013.8	1499.9	29.9	15.7	SOL 27, heading north, still just (5m) east of target line	
99/09/09 12:36:52.00	424275.1	5086030.3	1502.2	25.9	11.3	Altitude back down to 25m from 28m	

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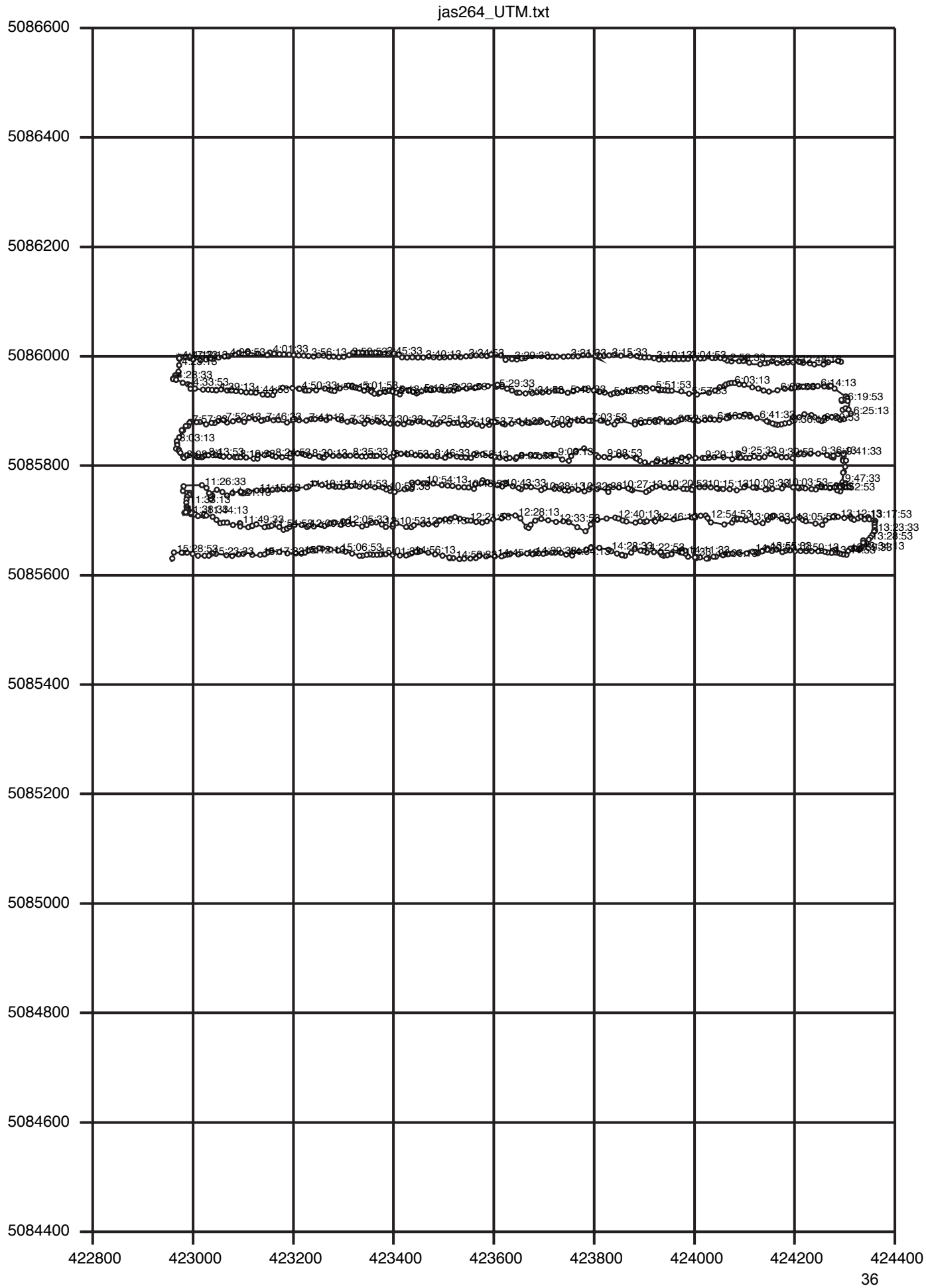
99/09/09 12:47:29.00	424260.8	5086136.1	1503.0	26.6	356.7	Jason back on track, ~5m to east of track for first 100m of this line	
99/09/09 12:59:20.00	424252.1	5086232.3	1503.3	25.3	4.6	Having trouble on this line, have had to back down jason to catch medea	
99/09/09 12:59:51.00	424256.3	5086244.0	1503.3	24.8	2.2	Weaving E and W across goal trackline	
99/09/09 13:28:48.00	424280.3	5086456.8	1503.9	23.7	56.0	EOL 27, beginning jog to NE to line 28	
99/09/09 13:41:49.00	424342.6	5086511.7	1502.3	24.6	346.9	SOL 28	
99/09/09 13:41:57.00	424342.6	5086511.7	1502.2	24.8	351.5	Heading north	
99/09/09 14:26:51.00	424349.2	5086829.4	1500.2	22.1	313.5	EOL 28, beginning jog to WNW to line 29	
99/09/09 14:36:37.00	424263.0	5086864.8	1497.3	24.6	301.8	SOL 29, heading north	
99/09/09 15:02:58.00	424258.1	5087108.4	1497.0	22.7	332.7	EOL 29, starting to move to the west. Going to do imagenex back to the camera - tie line	
99/09/09 15:19:34.00	424134.7	5087274.2	1497.2	22.1	291.3	FYI THIS IS JASON DIVE: JAS263	
99/09/09 15:32:15.00	423972.9	5087336.7	1497.0	21.4	241.8	End of the dive. Will be recovering Jason and Media, then will deploy the HUGE buoy.	
99/09/09 16:28:08.00	423796.6	5087791.5	405.3	30.0	154.9	400 meters from the surface	
99/09/09 16:42:08.00	423770.0	5087930.2	153.8	0.0	260.5	At 160 meters. Have to reboot the vehicle	
99/09/09 16:51:10.00	423770.5	5088059.6	151.2	0.0	201.4	Jason is OK now, heading for the surface again.	
99/09/09 16:59:58.00	423901.1	5088148.3	0.3	0.0	201.2	media out of the water	
99/09/09 17:00:52.00	423901.1	5088148.3	0.1	0.0	197.3	medea on deck	
99/09/09 17:04:30.00	423901.1	5088148.3	-0.8	0.0	155.0	Jason is on deck.	

JASON
DIVE 264

September 10, 1999

Axial Volcano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422800
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JASON DIVE 264

Date/Time	UTM X	UTM Y	Depth	Alt	Hdg	Comments	
JAS264							
99/09/10 00:56:58.00	423901.1	5088148.3	-1.2	30.0	61.8	Beginning second Jason launch	
99/09/10 00:57:03.00	423901.1	5088148.3	-1.2	30.0	61.8	Powering up	
99/09/10 00:58:34.00	423901.1	5088148.3	-0.8	30.0	228.0	Vehicle up & running	
99/09/10 00:58:50.00	423901.1	5088148.3	-0.9	30.0	227.3	Medea up & running, SIT on	
99/09/10 00:59:59.00	423901.1	5088148.3	-1.0	15.0	215.3	Jason in the water	
99/09/10 01:00:21.00	423901.1	5088148.3	1.6	30.0	196.5	Pins pulled, going down	
99/09/10 01:00:49.00	423559.9	5083638.0	0.9	1.8	171.1	Medea over the side	
99/09/10 01:01:31.00	423559.9	5083638.0	-0.1	30.0	185.1	Medea in the water	
99/09/10 01:02:17.00	423653.9	5083706.1	0.7	30.0	204.2	Going down	
99/09/10 01:10:45.00	424722.0	5085078.7	200.1	30.0	105.2	200m depth	
99/09/10 01:14:10.00	425013.9	5085066.5	301.3	30.0	136.6	300m depth	
99/09/10 01:25:37.00	425091.1	5085160.5	605.9	30.0	166.4	600m depth	
99/09/10 01:40:32.00	424707.8	5085213.9	1000.4	30.0	142.5	1000m depth	
99/09/10 01:42:47.00	424704.0	5085247.9	1060.0	30.0	142.6	Target 14 is nothing -- accidentally set	
99/09/10 01:51:58.00	424662.5	5085365.1	1302.7	30.0	142.5	Depth 1300m	
99/09/10 01:52:18.00	424661.2	5085368.7	1311.6	30.0	142.4	Driving north to start imagenex line #1	
99/09/10 01:55:57.00	424653.8	5085412.9	1400.6	30.0	141.1	Still have another 30-40 mins to start of line, will stop at 100m alt. and cruise at that alt.	
99/09/10 01:56:50.00	424648.3	5085425.8	1415.3	30.0	145.3	Cruising at altitude 140m	
99/09/10 02:13:59.00	424535.3	5085691.2	1425.4	30.0	155.3	Still driving over to start of line 1	
99/09/10 02:14:24.00	424532.8	5085695.3	1425.5	30.0	154.7	Cruising altitude ~100m	
99/09/10 02:35:38.00	424365.9	5086022.0	1463.9	30.0	279.7	Approaching start of line 1, descending to 25m alt.	
99/09/10 02:39:32.00	424333.8	5086021.6	1486.0	30.0	241.0	Drop 1 weight	
99/09/10 02:41:52.00	424315.7	5085993.2	1502.3	27.4	251.8	29m off bottom	
99/09/10 02:42:59.00	424297.7	5085987.9	1502.6	25.0	262.8	Starting Line 1 - Imagenex	
99/09/10 02:46:29.00	424257.7	5085985.0	1503.0	25.7	267.8	heading west on line 1	
99/09/10 04:02:36.00	423148.7	5086002.9	1499.2	24.2	271.7	VID_GRAB	
99/09/10 04:02:42.00	423148.7	5086002.9	1499.2	24.1	271.0	VID_GRAB	
99/09/10 04:02:55.00	423148.2	5086003.2	1499.3	24.1	271.7	VID_GRAB	Beautiful jellyfish
99/09/10 04:11:50.00	422999.8	5085994.4	1499.4	27.2	254.0	EOL 1	
99/09/10 04:12:19.00	422994.3	5085995.6	1499.6	27.2	254.1	heading to do a test to determine roll bias.	
99/09/10 04:16:02.00	422973.1	5085996.7	1499.5	27.9	238.7	Calibration test: Starting clockwise turn.	
99/09/10 04:18:48.00	422972.1	5085996.9	1499.5	28.0	256.5	Spin completed (calibration over)	
99/09/10 04:19:01.00	422972.1	5085996.9	1499.5	28.0	231.1	Heading toward line 2	
99/09/10 04:31:33.00	422966.4	5085957.0	1499.4	29.1	107.4	SOL 2	
99/09/10 04:31:46.00	422973.0	5085954.3	1499.4	28.3	108.0	line 2 heads east	

JASON DIVE 264

99/09/10 05:04:31.00	423356.9	5085938.6	1511.1	11.8	89.8	Going down to the bottom to see if we can locate Mkr-113. Need to know actual location. Have a location from Alvin, ROPOS and Jason and none of them agree.	
99/09/10 05:06:34.00	423357.1	5085933.3	1521.7	1.8	61.5	VID_GRAB	At bottom looking for Mkr-113. Tubeworms and drainout hole
99/09/10 05:07:23.00	423367.9	5085932.3	1522.6	2.5	110.4	VID_GRAB	
99/09/10 05:08:27.00	423371.7	5085933.0	1522.8	2.6	15.5	VID_GRAB	Mkr-113. Closest position was ROPOS
99/09/10 05:08:52.00	423372.1	5085933.2	1520.8	3.9	15.3	Mkr-113 position 3372, 5933	
99/09/10 05:09:21.00	423373.3	5085933.3	1515.7	8.9	53.7	Heading back up to resume Imagenex line 2, heading east	
99/09/10 06:08:55.00	424157.4	5085935.3	1500.5	29.8	43.3		
99/09/10 06:09:57.00	424180.5	5085940.3	1500.8	30.0	47.4	THIS IS DIVE JAS264!!!!!!!!!!!!!!!!	
99/09/10 06:19:38.00	424305.1	5085923.4	1507.0	23.7	162.1	EOL 2	
99/09/10 06:26:19.00	424298.1	5085884.8	1506.9	24.7	281.0	SOL 3	
99/09/10 07:00:09.00	423845.9	5085881.6	1503.5	21.6	261.6	Bill has gone to bed...	
99/09/10 07:56:51.00	423002.9	5085879.9	1501.9	25.0	269.5	EOL 3, heading south to line4	
99/09/10 08:10:36.00	422995.9	5085819.0	1501.8	25.8	93.5	SOL 4, heading east	
99/09/10 09:30:45.00	424156.5	5085821.0	1492.3	30.0	282.7	Flying a little high, ~30 m altitude	
99/09/10 09:35:48.00	424231.2	5085822.0	1500.0	30.0	80.6	Jason is looking the other way, being dragged by Medea (~15+)	
99/09/10 09:41:08.00	424299.1	5085823.4	1508.0	25.4	91.8	EOL 4, heading south to line5	
99/09/10 09:48:44.00	424289.9	5085760.6	1507.9	26.4	179.5	SOL 5, heading west	
99/09/10 11:26:29.00	423024.3	5085762.8	1504.0	25.7	86.5	Last few minutes Jason has been turned around	
99/09/10 11:27:01.00	423017.7	5085764.6	1504.1	24.7	88.2	Beginning turn to line 6	
99/09/10 11:30:01.00	422983.5	5085751.1	1504.4	19.7	177.5	EOL 5	
99/09/10 11:30:16.00	422988.6	5085750.7	1504.4	24.8	176.2	Turning	
99/09/10 11:39:36.00	422985.6	5085715.1	1504.5	27.9	90.0	SOL 6, heading east	
99/09/10 12:02:21.00	423246.8	5085690.6	1503.5	24.9	83.0	VID_GRAB	
99/09/10 12:18:45.00	423498.8	5085700.5	1502.4	24.8	86.1	Changing speed to 0.6, see if we can keep up	
99/09/10 12:20:23.00	423521.2	5085706.1	1502.5	18.4	90.8	Target 16 does not refer to anything...accident	

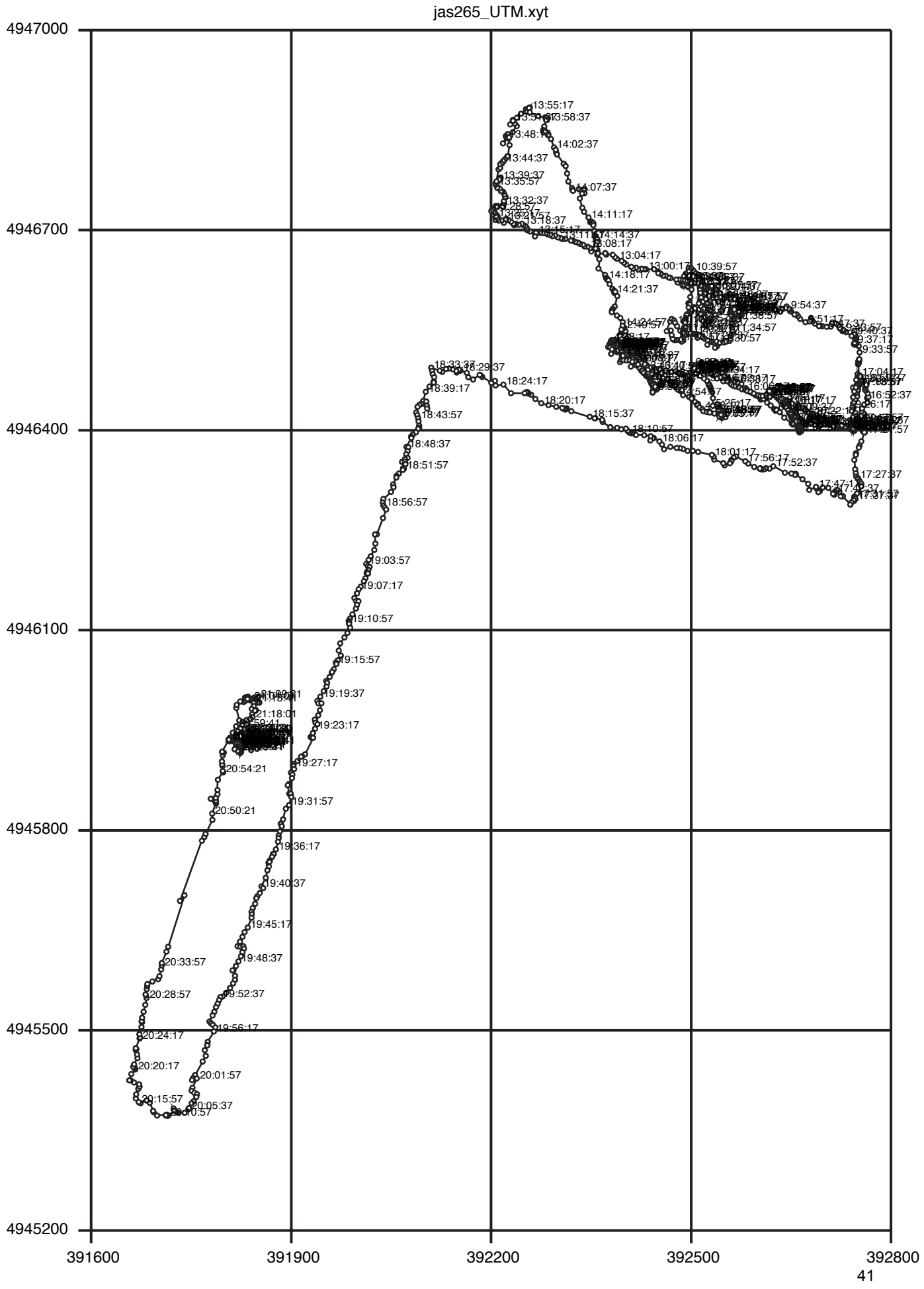
JASON DIVE 264

99/09/10 12:30:10.00	423665.3	5085688.5	1501.7	24.7	139.5	Speed back down to 0.5, can't keep up	
99/09/10 12:32:23.00	423682.9	5085699.3	1501.3	26.9	254.9	Speed down to 0.25, for Jason to catch up	
99/09/10 12:33:20.00	423702.3	5085700.6	1501.9	25.5	273.3	Speed back up to 0.5	
99/09/10 12:33:52.00	423716.1	5085699.1	1502.1	26.7	273.8	Jason turned around	
99/09/10 12:35:13.00	423738.4	5085698.6	1501.9	26.6	101.7	Course back to 090	
99/09/10 12:35:42.00	423738.4	5085698.6	1501.4	26.9	103.7	Speed back down to 0.25	
99/09/10 12:39:36.00	423816.2	5085702.6	1501.4	25.8	82.7	Speed back up to 0.5	
99/09/10 12:51:04.00	423960.1	5085699.5	1502.2	24.3	77.2	Series of bad ship and ROV fixes	
99/09/10 12:51:12.00	423960.1	5085699.5	1502.1	24.5	77.8		
99/09/10 12:51:56.00	423960.1	5085699.5	1502.1	24.3	84.9		
99/09/10 12:54:54.00	424026.5	5085709.0	1502.3	24.3	86.6	Nav screen is green	
99/09/10 13:12:36.00	424286.4	5085706.3	1509.5	23.7	94.5	Beginning turn back to west to start line 7	
99/09/10 13:12:45.00	424295.3	5085705.4	1509.6	23.8	93.9	EOL 6	
99/09/10 13:23:42.00	424362.9	5085686.3	1509.7	24.9	154.5	Making a wide turn	
99/09/10 13:34:39.00	424331.4	5085647.5	1509.7	25.7	273.3	SOL 7, heading west	
99/09/10 13:44:34.00	424275.4	5085644.1	1506.5	26.7	188.2	turned around again , heading 270, being dragged	
99/09/10 13:48:00.00	424247.0	5085643.3	1507.9	24.5	81.5	Lost weight when we were jerked, being dragged	
99/09/10 13:48:17.00	424240.9	5085644.0	1507.4	24.7	82.5	Now driving backwards to catch up, ship stopped	
99/09/10 13:52:29.00	424175.5	5085641.8	1506.2	24.7	273.2	Jason has caught up, spun around, again heading west 270	
99/09/10 14:20:42.00	423932.8	5085642.5	1502.3	24.2	275.6	Continuing west on line 7	
99/09/10 14:40:37.00	423666.1	5085639.7	1502.5	24.6	269.9	Continuing line 7, will bring up after this line	
99/09/10 15:27:32.00	422980.9	5085642.8	1502.5	22.9	270.7	EOL 7	
99/09/10 15:29:14.00	422961.9	5085641.6	1502.5	30.0	176.6	Jason coming up. Done here at Axial.	
99/09/10 16:18:53.00	422711.3	5086326.1	456.3	30.0	115.0	Will shut down transponders during the recovery of Jason and Medea	
99/09/10 16:45:48.00	422606.4	5086699.3	0.1	30.0	159.9	medea on deck	
99/09/10 16:50:37.00	422606.4	5086699.3	-1.1	30.0	35.8	Jason on deck	

JASON
DIVE 265

September 11-12, 1999

South Cleft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JASON DIVE 265

Date/Time	UTM X	UTM Y	Depth	Alt	Hdg	Comments	
JAS265							
99/09/11 01:08:13.00	422606.4	5086699.3	-1.0	30.0	316.1	vehicle powered up	
99/09/11 01:13:13.00	422606.4	5086699.3	-1.4	30.0	201.4	Launching Jason	
99/09/11 01:13:44.00	422606.4	5086699.3	-1.4	30.0	244.5	Jason in the water	
99/09/11 01:14:04.00	422606.4	5086699.3	0.1	30.0	243.4	Pin pulled	
99/09/11 01:16:25.00	392100.3	4947140.2	16.8	30.0	211.1	15m depth	
99/09/11 01:17:57.00	392236.1	4945829.4	31.5	30.0	175.1	30m depth	
99/09/11 01:18:20.00	392411.9	4947003.2	38.0	30.0	174.4	Control transferred to the van	
99/09/11 01:30:23.00	392312.7	4945960.3	210.3	30.0	122.9	200m depth	
99/09/11 01:32:09.00	392319.5	4945969.6	266.1	30.0	125.1	break on the winch is making bad sounds, not descending at full speed	
99/09/11 01:33:40.00	392325.9	4945989.1	314.3	30.0	128.6	all stop on winch	
99/09/11 01:34:44.00	392331.5	4945985.5	323.3	30.0	126.2	Starting winch again	
99/09/11 01:36:24.00	392335.9	4945985.9	364.5	30.0	126.0	all stop	
99/09/11 01:36:58.00	392333.6	4945989.9	381.7	30.0	125.1	Starting down again	
99/09/11 01:37:29.00	392329.8	4946001.8	397.5	30.0	125.3	Adjustments were made on brake, noise stopped	
99/09/11 01:40:55.00	392326.6	4946028.3	501.3	30.0	110.4	500m depth	
99/09/11 01:43:59.00	392317.3	4946042.2	594.2	30.0	152.2	VID_GRAB	test shot, dive 265
99/09/11 01:57:37.00	392339.4	4946085.6	1000.2	30.0	143.8	1000m depth	
99/09/11 01:58:40.00	392339.4	4946085.6	1031.4	30.0	144.3	Nav is in the red	
99/09/11 02:14:48.00	392374.1	4946250.7	1499.4	30.0	133.3	1500m depth	
99/09/11 02:25:14.00	392400.3	4946318.0	1803.7	30.0	99.1	1800m depth	
99/09/11 02:32:02.00	392418.5	4946381.0	2000.7	30.0	145.1	2000m depth	
99/09/11 02:33:57.00	392423.8	4946400.3	2058.3	30.0	144.3	Dropping 1 weight	
99/09/11 02:34:58.00	392425.9	4946409.8	2082.6	30.0	130.5	Approaching bottom	
99/09/11 02:35:24.00	392425.9	4946409.8	2093.4	30.0	135.1	Stopping ship	
99/09/11 02:38:48.00	392404.2	4946467.0	2104.7	30.0	40.8	Descending slowly	
99/09/11 02:44:33.00	392396.2	4946511.3	2207.7	2.6	8.5	On bottom	
99/09/11 02:47:09.00	392400.0	4946515.3	2203.4	6.9	13.1	Started video tapes at 0245	
99/09/11 02:47:55.00	392400.3	4946515.3	2203.3	7.0	12.9	VID_GRAB	test on bottom
99/09/11 02:56:28.00	392397.8	4946521.5	2202.4	7.9	130.8	THIS IS DIVE JAS265	
99/09/11 02:57:43.00	392401.7	4946514.7	2202.4	8.0	130.2	Securing SM2000 to see if interference goes away	
99/09/11 02:59:42.00	392411.2	4946505.7	2202.3	8.1	130.4	Turning SM2000 back on and dropping range	
99/09/11 03:04:40.00	392434.5	4946480.4	2206.7	4.2	123.1	Searching for benchmark 4	
99/09/11 03:06:29.00	392439.8	4946474.5	2204.9	5.6	120.5	Found benchmark 1	
99/09/11 03:07:40.00	392442.4	4946469.2	2208.1	2.3	111.9	VID_GRAB	benchmark1
99/09/11 03:08:28.00	392445.4	4946468.7	2209.5	1.4	57.0	VID_GRAB	more benchmark 4
99/09/11 03:09:10.00	392443.7	4946465.2	2209.5	1.6	57.3	VID_GRAB	more benchmark4
99/09/11 03:09:29.00	392444.9	4946465.3	2209.5	1.5	56.7	VID_GRAB	4's glass ball
99/09/11 03:10:16.00	392444.5	4946465.6	2209.6	1.5	56.7	VID_GRAB	benchmark 4

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99/09/11 03:10:36.00	392444.9	4946465.3	2209.5	1.5	56.5	whoops, first few video grabs were from the wrong camera	
99/09/11 03:10:49.00	392444.9	4946465.3	2209.5	1.5	56.7	VID_GRAB	#4 again
99/09/11 03:11:32.00	392444.1	4946466.6	2209.5	1.5	56.5	VID_GRAB	another frame grab of benchmark 4
99/09/11 03:12:05.00	392444.0	4946464.8	2207.2	3.7	56.7	VID_GRAB	
99/09/11 03:12:56.00	392445.0	4946466.8	2206.4	3.9	51.8	VID_GRAB	#4's glass ball (on 5 meters of line)
99/09/11 03:13:47.00	392445.0	4946466.7	2206.5	3.9	52.9	VID_GRAB	
99/09/11 03:15:51.00	392445.5	4946464.7	2204.7	5.3	48.9	VID_GRAB	benchmark #4's flag
99/09/11 03:18:14.00	392448.5	4946461.0	2210.2	0.8	301.5	VID_GRAB	
99/09/11 03:18:41.00	392449.1	4946463.3	2209.9	1.4	235.3	VID_GRAB	really great frame grab of benchmark 4 and pit
99/09/11 03:22:55.00	392447.8	4946464.2	2210.4	30.0	231.7	VID_GRAB	grabbing the knife
99/09/11 03:25:44.00	392447.8	4946463.7	2210.5	30.0	232.5	VID_GRAB	cutting the weight off the benchmark
99/09/11 03:32:12.00	392448.8	4946463.5	2210.6	30.0	230.7	VID_GRAB	
99/09/11 03:32:41.00	392442.3	4946456.7	2210.6	24.2	230.6	VID_GRAB	still slicing the line
99/09/11 03:33:38.00	392448.4	4946463.3	2210.6	30.0	230.8	VID_GRAB	it's cut
99/09/11 03:41:17.00	392438.3	4946481.4	2203.4	8.1	319.1	Want to place it at x=392400 y=4946525	
99/09/11 03:54:43.00	392395.3	4946524.1	2206.3	5.3	326.9	VID_GRAB	glass ball
99/09/11 03:55:41.00	392393.1	4946521.6	2206.3	5.0	52.7	VID_GRAB	
99/09/11 03:56:01.00	392390.5	4946524.5	2207.1	4.1	79.2	VID_GRAB	
99/09/11 03:59:51.00	392393.7	4946526.6	2210.1	1.5	80.4	picking up benchmark and moving it to its resting place	
99/09/11 04:04:03.00	392393.6	4946527.2	2211.5	30.0	120.8	VID_GRAB	final? spot
99/09/11 04:08:15.00	392394.8	4946526.5	2211.7	30.0	120.6	VID_GRAB	final position for benchmark 4 x=2394 y=6527
99/09/11 04:09:35.00	392395.2	4946528.1	2211.8	30.0	120.2	Doing a pressure reading to determine absolute depth	
99/09/11 04:13:46.00	392394.7	4946526.7	2211.8	30.0	119.8	putting pressure sensor on benchmark	
99/09/11 04:14:38.00	392395.2	4946525.3	2211.8	30.0	119.6	VID_GRAB	orientation: green thing toward center, pressure sensor on its end

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99/09/11 04:16:23.00	392394.7	4946525.6	2211.8	1.7	119.4	Started pressure reading at 0414:30	
99/09/11 04:25:13.00	392394.6	4946525.6	2211.9	30.0	116.5	0425 end of reading	
99/09/11 04:28:24.00	392395.9	4946526.2	2210.7	1.4	117.7	Finished for now at benchmark4	
99/09/11 04:30:41.00	392390.9	4946529.5	2208.3	3.6	103.8	VID_GRAB	benchmark 4 and glass ball
99/09/11 04:46:15.00	392420.2	4946512.5	2203.9	8.0	263.7	Changed the video	
99/09/11 04:46:28.00	392420.2	4946512.5	2202.2	9.4	262.3	Heading toward benchmark 3	
99/09/11 05:01:12.00	392541.2	4946424.7	2204.8	7.6	99.8	VID_GRAB	found benchmark 3
99/09/11 05:02:59.00	392544.9	4946425.1	2211.5	1.2	99.0	VID_GRAB	benchmark 2
99/09/11 05:09:10.00	392545.0	4946422.6	2212.6	0.7	98.6	VID_GRAB	
99/09/11 05:09:29.00	392548.6	4946424.4	2212.5	0.8	93.7	VID_GRAB	
99/09/11 05:10:15.00	392545.1	4946422.4	2212.5	1.3	88.1		
99/09/11 05:10:51.00	392546.0	4946422.7	2212.5	0.9	88.2	VID_GRAB	cutting benchmark 3 loose from its weights
99/09/11 05:19:28.00	392546.6	4946421.7	2207.6	5.2	90.2	moving the benchmark 3 to its resting place	
99/09/11 05:33:09.00	392510.1	4946487.3	2211.2	1.4	309.4	VID_GRAB	positioning benchmark 3
99/09/11 05:38:09.00	392508.7	4946488.1	2210.4	2.0	312.6		
99/09/11 05:38:55.00	392508.8	4946489.3	2210.4	2.1	311.6	VID_GRAB	
99/09/11 05:42:05.00	392509.0	4946488.6	2211.4	1.4	314.0	VID_GRAB	
99/09/11 05:50:40.00	392509.5	4946490.4	2212.0	30.0	314.2	VID_GRAB	
99/09/11 05:50:54.00	392509.5	4946490.4	2212.0	1.7	314.3	VID_GRAB	Big crab
99/09/11 05:52:19.00	392509.7	4946490.6	2212.0	30.0	314.2		
99/09/11 05:56:31.00	392507.9	4946492.4	2212.1	0.7	312.2	VID_GRAB	BENCHMARK 3 FINAL RESTING PLACE
99/09/11 05:58:39.00	392507.3	4946494.7	2212.2	30.0	25.9	VID_GRAB	
99/09/11 05:58:41.00	392507.3	4946494.7	2212.2	0.7	25.1		
99/09/11 06:02:19.00	392507.2	4946493.6	2212.3	30.0	26.0	x=392506 y=4946494 final position for benchmark3	
99/09/11 06:11:57.00	392506.7	4946493.9	2212.4	18.0	28.2	VID_GRAB	pressure sensor on benchmark 3
99/09/11 06:23:56.00	392507.3	4946493.3	2212.6	30.0	29.2	Finished pressure sensor reading. All done here.	
99/09/11 06:50:19.00	392659.4	4946409.4	2210.1	5.5	81.9	VID_GRAB	benchmarks 1 and 2 found, only one in screen
99/09/11 06:51:24.00	392659.9	4946408.8	2210.1	5.5	131.0	VID_GRAB	Second of the two benchmarks
99/09/11 06:53:12.00	392663.6	4946405.4	2213.4	2.4	140.6	VID_GRAB	benchmark 1

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99/09/11 06:53:48.00	392663.2	4946403.2	2213.3	2.6	111.2	VID_GRAB	benchmark 2
99/09/11 06:59:46.00	392660.4	4946394.7	2215.1	30.0	353.8	Weights cut from benchmark 2	
99/09/11 07:01:52.00	392663.7	4946398.3	2215.1	30.0	359.2	VID_GRAB	Benchmark 2 after weights cut
99/09/11 07:05:23.00	392662.0	4946407.8	2206.8	8.7	316.6	Carrying benchmark 2 and headed for target 8, where benchmark 2 will be placed	
99/09/11 07:18:41.00	392617.3	4946453.3	2205.4	9.1	268.8	Going down to benchmark 2 final site	
99/09/11 07:19:26.00	392620.1	4946453.7	2212.4	2.0	268.5	Back on seafloor for benchmark 2 site	
99/09/11 07:20:27.00	392625.6	4946457.2	2213.7	1.3	270.9	VID_GRAB	BENCHMARK 2 FINAL SITE
99/09/11 07:21:11.00	392626.6	4946457.4	2212.8	2.0	323.2	VID_GRAB	Benchmark 2's final site
99/09/11 07:22:23.00	392621.3	4946458.2	2213.6	1.2	57.5	Getting ready for pressure reading at benchmark 2	
99/09/11 07:26:25.00	392623.0	4946457.3	2214.1	1.2	327.2	Moving benchmark 2 again	
99/09/11 07:27:28.00	392621.4	4946456.5	2214.7	0.7	324.5	No Really, THIS IS BENCHMARK 2'S FINAL SITE	
99/09/11 07:28:17.00	392621.2	4946456.8	2214.8	0.7	325.4	VID_GRAB	Benchmark 2's final home
99/09/11 07:30:03.00	392622.0	4946459.7	2214.4	30.0	185.0	VID_GRAB	Benchmark 2
99/09/11 07:33:01.00	392623.2	4946458.3	2214.7	30.0	234.3	VID_GRAB	benchmark 2 on lobate flow
99/09/11 07:36:27.00	392618.2	4946451.1	2214.7	20.6	231.6	VID_GRAB	pressure sensor in claw
99/09/11 07:37:43.00	392622.1	4946456.6	2214.6	30.0	231.5	VID_GRAB	Pressure sensor measurement at benchmark 2
99/09/11 07:38:31.00	392622.3	4946459.0	2214.6	0.9	231.9	VID_GRAB	pressure sensor perfectly in place
99/09/11 07:49:19.00	392619.0	4946454.1	2214.7	30.0	230.7	Removing the pressure sensor from benchmark 2	
99/09/11 07:50:59.00	392621.4	4946456.6	2214.7	30.0	230.2	GOOD POSITION FOR BENCHMARK 2: 392622x/4946457y	
99/09/11 07:52:09.00	392622.2	4946456.4	2212.4	2.6	232.8	Heading to benchmark 1	
99/09/11 08:09:00.00	392658.2	4946413.1	2212.3	4.0	125.6	At benchmark 1, getting ready to cut weights	
99/09/11 08:09:36.00	392663.1	4946412.8	2213.3	2.8	148.4	VID_GRAB	Crab on benchmark 1!
99/09/11 08:10:05.00	392666.1	4946413.9	2214.5	1.3	194.4	VID_GRAB	crab on benchmark 1
99/09/11 08:17:25.00	392669.6	4946410.8	2216.1	30.0	194.1	Weights cut for benchmark 1...the crab ran away...	
99/09/11 08:17:40.00	392669.0	4946410.7	2216.1	30.0	194.1	VID_GRAB	rope cut

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99/09/11 08:19:42.00	392669.7	4946410.4	2214.2	1.9	196.0	VID_GRAB	Benchmark 1 after weights cut
99/09/11 08:20:29.00	392668.1	4946410.2	2211.5	4.3	170.4	Picked up benchmark 1, onto final drop site	
99/09/11 08:33:46.00	392706.2	4946408.7	2206.0	8.3	87.9	At the wall	
99/09/11 08:36:39.00	392720.0	4946406.4	2196.7	7.0	132.1	Climbing steeper part of wall	
99/09/11 08:48:24.00	392740.1	4946406.1	2194.4	2.4	130.3	Found step in wall ~2195 m deep	
99/09/11 08:49:53.00	392741.6	4946405.7	2193.1	7.9	112.8	Looking for place on step to place benchmark 1	
99/09/11 08:52:21.00	392744.2	4946402.2	2194.5	1.5	108.2	VID_GRAB	Benchmark 1 placed
99/09/11 08:54:45.00	392744.5	4946401.1	2195.3	1.3	62.1	Tested benchmark position....solid.	
99/09/11 08:56:44.00	392745.2	4946403.7	2195.3	1.3	62.4	FINAL BENCHMARK 1 POSITION: 392744x/4946404y	
99/09/11 08:58:06.00	392743.3	4946399.5	2195.3	1.4	61.5	Putting pressure sensor in position	
99/09/11 08:58:43.00	392743.8	4946402.1	2195.3	1.5	61.3	pressure sensor in position	
99/09/11 08:59:42.00	392741.2	4946395.4	2195.3	1.3	60.6	VID_GRAB	Pressure sensor at Benchmark 1
99/09/11 09:07:19.00	392745.2	4946401.6	2195.3	1.2	58.4	Oscillating a bit while taking pressure measurement	
99/09/11 09:09:28.00	392745.2	4946401.3	2195.3	0.7	59.5	Starting measurement again for 5 minutes	
99/09/11 09:14:18.00	392742.1	4946398.4	2195.3	0.7	57.3	Almost done with measurement	
99/09/11 09:18:03.00	392742.4	4946402.0	2193.0	4.4	60.0	Pressure sensor back on Jason	
99/09/11 09:20:35.00	392742.3	4946412.6	2193.0	5.3	349.0	Heading for imagenex line 99-1; will do part of it and then head towards USGS tower #1	
99/09/11 09:36:56.00	392745.7	4946531.2	2193.0	11.0	354.6	On imagenex line 6 (99-1)	
99/09/11 09:38:00.00	392746.7	4946533.8	2188.1	15.7	322.5	Turning video off	
99/09/11 09:38:57.00	392746.4	4946536.3	2178.5	25.0	321.4	At 24 m altitude, ready for imagenex line 99-1	
99/09/11 10:07:00.00	392522.1	4946615.4	2187.7	24.7	287.4	video on	
99/09/11 10:08:35.00	392533.2	4946615.3	2205.3	7.9	171.7	Detour from imagenex line 6 (99-1), heading to USGS tower #1	
99/09/11 10:15:00.00	392516.5	4946584.7	2209.5	3.7	332.6	At target, looking around for USGS tower #1	
99/09/11 10:19:17.00	392520.7	4946579.3	2210.8	2.3	118.7	Heading south pass target, still looking for tripod	

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99/09/11 10:25:39.00	392515.2	4946566.6	2210.9	3.1	259.9	Completed a box pattern around the target and no luck.	
99/09/11 10:26:49.00	392519.2	4946582.0	2211.0	2.2	45.8	Heading north	
99/09/11 10:34:25.00	392523.5	4946611.3	2210.5	3.9	319.1	Heading for target #11 now, same tripod but different location	
99/09/11 10:38:15.00	392510.9	4946632.4	2211.1	3.1	311.2	At target #11	
99/09/11 10:39:21.00	392510.4	4946632.8	2211.2	2.9	300.4	Starting a box pattern around target #11	
99/09/11 11:24:14.00	392503.8	4946544.7	2211.7	2.8	84.3	Still searching for USGS Tower 1	
99/09/11 11:40:48.00	392564.5	4946570.1	2212.2	0.7	327.6	Target found	
99/09/11 11:42:46.00	392564.8	4946573.6	2212.1	1.1	320.8	VID_GRAB	
99/09/11 11:43:11.00	392564.2	4946575.2	2212.0	1.0	319.9	All stop on ship	
99/09/11 11:43:19.00	392564.2	4946575.2	2212.1	0.9	319.1	Target 15 is USGS Tower 1	
99/09/11 11:45:14.00	392559.7	4946573.2	2211.6	1.3	305.9	392564 4946580 Target 15	
99/09/11 11:45:34.00	392562.4	4946580.4	2211.5	1.3	307.3	VID_GRAB	USGS Tripod 1
99/09/11 11:47:09.00	392562.2	4946581.6	2210.7	2.1	292.5	VID_GRAB	
99/09/11 11:47:16.00	392562.2	4946581.6	2210.8	2.0	292.6	VID_GRAB	
99/09/11 11:49:50.00	392561.9	4946579.6	2210.7	2.0	292.8	Target 16 is closer to the instrument, 15 was slightly south	
99/09/11 11:55:17.00	392562.4	4946579.3	2212.5	1.9	297.8	Paroscientific reading will be take at base of leg of tripod	
99/09/11 11:55:39.00	392562.4	4946579.3	2212.5	1.6	298.2	Base resting on rock, plugs pointing up	
99/09/11 11:55:47.00	392562.4	4946579.3	2212.5	1.3	298.0	Begin taking readings now	
99/09/11 11:57:52.00	392560.1	4946583.7	2212.5	1.6	297.8	VID_GRAB	
99/09/11 11:58:14.00	392561.6	4946579.2	2212.5	1.6	297.6	VID_GRAB	Location of pressure depth reading
99/09/11 11:58:20.00	392561.6	4946579.2	2212.5	1.8	297.6		
99/09/11 11:58:28.00	392562.6	4946579.5	2212.5	1.6	297.5		
99/09/11 11:58:40.00	392562.6	4946579.5	2212.5	1.6	297.4	VID_GRAB	
99/09/11 12:00:22.00	392562.3	4946579.0	2212.5	1.1	296.3	VID_GRAB	SE leg of the tripod
99/09/11 12:00:46.00	392561.0	4946578.8	2212.5	1.1	296.2	VID_GRAB	
99/09/11 12:00:55.00	392562.6	4946579.7	2212.5	1.1	296.1	VID_GRAB	
99/09/11 12:06:03.00	392562.2	4946579.3	2212.4	1.1	294.9	VID_GRAB	
99/09/11 12:06:32.00	392561.6	4946578.8	2212.4	1.1	294.8	Move to pick up instrument	
99/09/11 12:09:52.00	392561.6	4946577.3	2212.4	1.5	293.7	Paroscientific. back on Jason basket	
99/09/11 12:16:11.00	392563.2	4946580.4	2212.3	30.0	286.4	VID_GRAB	
99/09/11 12:16:25.00	392563.2	4946580.4	2212.2	0.8	295.6	VID_GRAB	Measurement made from this angle, 294

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99/09/11 12:16:49.00	392562.8	4946580.4	2212.2	0.8	295.5	VID_GRAB	Looking at leg we sampled from
99/09/11 12:25:37.00	392576.0	4946574.5	2205.4	6.7	304.3	Trying to get good readings on the tripod on the Simrad, no luck	
99/09/11 12:36:51.00	392565.3	4946582.5	2209.4	2.6	254.9	Heading north back to IMA 6 (99-1)	
99/09/11 12:45:11.00	392565.4	4946596.6	2204.7	7.3	291.0	Stop video tapes, start imagenex collection	
99/09/11 12:47:51.00	392549.2	4946598.6	2185.8	25.4	289.7	Back on IMA 6 (99-1), heading NW	
99/09/11 13:22:43.00	392222.0	4946716.6	2186.9	23.6	283.8	Ship beginning to make turn to north	
99/09/11 13:28:23.00	392207.7	4946721.0	2186.8	23.7	300.7	Note IMA 99-1 aka Line 6	
99/09/11 13:29:39.00	392201.1	4946729.4	2186.9	23.7	347.0	EOL 6 (99-1)	
99/09/11 13:33:58.00	392221.1	4946749.9	2186.7	23.9	30.8	SOL 16 (99-2)	
99/09/11 13:47:26.00	392227.6	4946827.3	2187.6	24.1	344.6	Stop Line 16 survey	
99/09/11 13:47:51.00	392224.9	4946843.8	2187.6	23.9	341.3	Going to pick up glass balls from extensometer benchmarks	
99/09/11 13:56:05.00	392257.5	4946882.8	2187.9	23.7	28.1	Heading back to Benchmark 4	
99/09/11 14:01:34.00	392285.7	4946843.4	2187.9	23.4	156.2	Time & weather permitting, resume IMA line 99-2 at X=2227 Y=6827	
99/09/11 14:26:59.00	392396.0	4946536.6	2206.9	4.7	185.2	Approaching Benchmark 4	
99/09/11 14:27:13.00	392395.6	4946531.7	2207.0	4.5	185.3	In visual range	
99/09/11 14:28:46.00	392393.4	4946524.8	2211.5	1.1	198.8	Resumed video tapes	
99/09/11 14:28:58.00	392394.8	4946526.6	2211.5	1.1	198.6	VID_GRAB	
99/09/11 14:29:14.00	392395.0	4946525.7	2211.5	1.1	198.2	VID_GRAB	Moving to release glass ball/float
99/09/11 14:33:42.00	392394.3	4946525.4	2211.5	1.1	196.1	VID_GRAB	
99/09/11 14:34:34.00	392394.0	4946526.1	2211.4	0.7	195.9	VID_GRAB	
99/09/11 14:34:49.00	392394.0	4946526.1	2211.4	1.0	197.0	VID_GRAB	
99/09/11 14:43:03.00	392394.2	4946525.1	2211.4	30.0	196.3	Changed video tapes	
99/09/11 14:52:53.00	392395.8	4946526.2	2211.4	30.0	196.5	Taking another pressure reading	
99/09/11 14:58:50.00	392394.8	4946525.0	2211.5	1.7	196.9	14:58:45 Starting pressure sensor measurement	
99/09/11 14:59:20.00	392394.8	4946525.0	2211.5	30.0	196.5	VID_GRAB	benchmark 1 pressure sensor reading
99/09/11 15:09:42.00	392395.1	4946524.0	2211.5	1.6	191.2	Finished with pressure test	
99/09/11 15:15:58.00	392395.9	4946527.0	2211.5	30.0	189.0	VID_GRAB	
99/09/11 15:16:39.00	392394.9	4946525.0	2211.5	1.5	187.7	VID_GRAB	cutting the glass ball from the benchmark
99/09/11 15:19:29.00	392395.7	4946525.0	2210.9	0.7	188.7	VID_GRAB	

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99/09/11 15:33:25.00	392395.9	4946525.2	2210.7	0.9	189.8	moving away from the benchmark. Moving on to benchmark 3	
99/09/11 15:50:00.00	392505.7	4946494.1	2211.2	0.7	36.8	VID_GRAB	close up
99/09/11 15:50:43.00	392506.0	4946493.5	2211.2	0.7	36.5	crab holding a rope of the benchmark 3	
99/09/11 15:53:06.00	392505.0	4946494.1	2211.2	0.7	35.6	VID_GRAB	A crab running away from the cutting device
99/09/11 15:53:22.00	392505.6	4946494.3	2211.2	0.7	35.6	VID_GRAB	cutting done
99/09/11 15:54:09.00	392504.8	4946494.1	2211.2	0.7	35.5	VID_GRAB	the cutting device
99/09/11 15:56:53.00	392502.8	4946489.4	2209.7	1.7	99.2	VID_GRAB	Benchmark 3 released from the rope
99/09/11 15:58:16.00	392516.2	4946489.2	2209.7	2.1	100.4	heading to the benchmark 2	
99/09/11 16:04:43.00	392560.4	4946468.7	2209.8	2.2	109.9	VID_GRAB	weight from Seacliffe (navy sub)
99/09/11 16:09:17.00	392613.8	4946454.0	2210.4	2.5	46.7	VID_GRAB	benchmark 2
99/09/11 16:12:32.00	392618.3	4946459.1	2213.0	30.0	46.6	VID_GRAB	cutting done
99/09/11 16:14:43.00	392617.3	4946458.4	2211.5	1.5	68.1	heading to the benchmark 1	
99/09/11 16:24:35.00	392698.7	4946410.2	2211.2	2.4	116.3	VID_GRAB	
99/09/11 16:25:11.00	392707.9	4946411.9	2205.7	6.0	106.2	coming up the wall looking for BM 1	
99/09/11 16:28:06.00	392738.6	4946404.0	2193.0	6.6	121.6	VID_GRAB	jumbled? talus on the bench
99/09/11 16:28:31.00	392741.0	4946404.2	2192.9	1.2	101.7	VID_GRAB	benchmark 1
99/09/11 16:28:57.00	392741.0	4946404.2	2193.2	0.7	81.9	VID_GRAB	again BM 1
99/09/11 16:32:15.00	392744.0	4946402.1	2193.3	1.0	68.1	VID_GRAB	pillows near benchmark 1
99/09/11 16:32:52.00	392743.8	4946402.4	2193.4	0.8	68.1	VID_GRAB	cutting loose the glass ball from benchmark 1. Beautiful pillows
99/09/11 16:36:37.00	392743.6	4946401.5	2188.9	4.6	32.2	Going to do some spins	
99/09/11 16:48:03.00	392760.6	4946423.0	2189.3	6.3	36.3	Video finished	
99/09/11 17:08:52.00	392750.0	4946468.6	2189.1	14.8	240.1	small boat on board	
99/09/11 17:15:32.00	392745.0	4946458.2	2189.1	17.6	167.0	Heading to the start of Imagenex line 4 (which has been extended to the SE)	
99/09/11 17:16:05.00	392743.1	4946449.6	2188.9	19.1	167.6	x=392715, y= 4946300 New start of line, just south of benchmark 4	

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99/09/11 17:28:58.00	392754.1	4946320.7	2164.2	20.3	148.6	collecting imagenex data on the way to the SOL 9 (99-5)	
99/09/11 17:41:43.00	392722.4	4946307.4	2160.7	26.7	288.4	SOL 9 (99-5) Imagenex here we go!	
99/09/11 18:21:28.00	392256.4	4946455.1	2190.7	21.6	283.4	Just did framegrab of Axial trough with SM 2000	
99/09/11 18:27:50.00	392173.1	4946476.0	2190.6	20.5	281.4	took another framegrab with SM20000. Shows 2 ridges...	
99/09/11 18:33:37.00	392123.0	4946489.4	2185.2	19.5	282.6	The line that we are just now finishing is 9 (99-5)	
99/09/11 18:34:05.00	392110.2	4946493.9	2185.3	27.3	203.2	Positioning to start line 16 (99-6) now!	
99/09/11 18:34:32.00	392111.6	4946489.0	2185.3	27.7	200.7	SOL 16 (99-6)	
99/09/11 20:04:13.00	391757.6	4945400.6	2188.1	28.6	183.9	EOL 16 (99-6), heading west towards line 15 (99-7)	
99/09/11 20:20:22.00	391660.3	4945434.7	2196.6	21.7	25.9	SOL 15 (99-7), driving north-northwest	
99/09/11 20:20:30.00	391666.2	4945441.5	2196.6	21.9	28.1		
99/09/11 20:45:54.00	404249.4	4956333.8	2195.2	26.1	22.4	Navigation system down, not sure for how long	
99/09/11 20:48:03.00	391770.0	4945789.8	2195.3	25.4	23.6	Navigation system dropped out for about 5 minutes (beginning ~2040)	
99/09/11 20:48:20.00	391770.0	4945789.8	2195.3	13.4	23.6	Good fix on ROV	
99/09/11 20:49:24.00	391771.8	4945794.5	2195.1	25.0	23.6	~200 m from HOBO site	
99/09/11 20:53:26.00	391789.4	4945854.1	2192.1	23.9	21.0	VID_GRAB	random frame grab
99/09/11 21:03:54.00	391842.8	4945997.3	2183.3	30.0	11.3	EOL 15 (99-7)	
99/09/11 21:04:17.00	391840.3	4945996.6	2187.4	30.0	2.0	Jason going down to the bottom	
99/09/11 21:06:49.00	391835.4	4946000.3	2213.8	1.7	214.9	Starting video tapes at 2105	
99/09/11 21:07:02.00	391835.4	4945999.4	2213.4	1.6	275.6	On bottom looking for site of HOBO probes	
99/09/11 21:07:31.00	391833.0	4945999.5	2213.1	1.6	258.7	VID_GRAB	pillar
99/09/11 21:07:54.00	391831.9	4945997.6	2210.3	3.4	217.8	VID_GRAB	more pillars
99/09/11 21:16:02.00	391847.0	4945980.7	2218.1	3.4	184.9	Still looking for probes	
99/09/11 21:20:56.00	391832.9	4945958.6	2218.2	2.7	257.4	Spider crab	
99/09/11 21:21:23.00	391832.9	4945958.6	2218.1	2.4	227.4	hydrothermal staining	
99/09/11 21:22:35.00	391823.8	4945952.5	2217.9	3.5	181.0	Heading south looking for probes	
99/09/11 21:24:06.00	391827.4	4945944.3	2215.0	4.5	117.1	VID_GRAB	hydrothermal vent
99/09/11 21:24:29.00	391827.4	4945944.3	2210.5	8.3	116.5	VID_GRAB	
99/09/11 21:24:42.00	391827.4	4945944.3	2208.0	9.1	116.7	VID_GRAB	
99/09/11 21:24:51.00	391827.4	4945944.3	2206.3	12.3	116.9	VID_GRAB	
99/09/11 21:25:13.00	391829.1	4945943.2	2205.0	13.1	134.1	VID_GRAB	

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99/09/11 21:25:40.00	391836.1	4945945.9	2203.4	12.9	149.0	All previous frame grabs at Vent 1	
99/09/11 21:26:39.00	391836.1	4945945.9	2201.4	14.5	162.4	At Vent 1, the site of the HOBO probes (for recovery and deployment)	
99/09/11 21:31:01.00	391824.1	4945927.2	2204.0	9.0	333.6	VID_GRAB	At top of vent 1
99/09/11 21:31:07.00	391824.1	4945927.2	2204.6	8.2	330.8	VID_GRAB	
99/09/11 21:31:26.00	391837.5	4945941.6	2204.5	12.1	311.7	VID_GRAB	Tubeworms on Vent 1
99/09/11 21:31:54.00	391833.4	4945939.6	2204.0	14.3	288.0	VID_GRAB	
99/09/11 21:33:02.00	391837.1	4945941.0	2204.5	9.5	283.3	VID_GRAB	Billowing smoke
99/09/11 21:34:51.00	391835.3	4945941.4	2203.7	9.5	345.8	VID_GRAB	Two chimneys side by side
99/09/11 21:37:24.00	391838.6	4945940.9	2204.1	14.1	279.0	VID_GRAB	
99/09/11 21:39:34.00	391836.3	4945940.9	2208.1	10.5	264.1	VID_GRAB	
99/09/11 21:40:58.00	391840.0	4945944.4	2207.6	9.1	310.7	Structures ~10 m tall, growing up along wall	
99/09/11 21:41:19.00	391834.0	4945939.3	2207.9	5.5	327.1	VID_GRAB	
99/09/11 21:41:47.00	391834.9	4945939.6	2208.4	10.3	354.7	Chimney may have grown over the probe	
99/09/11 21:48:28.00	391836.9	4945941.7	2205.6	4.8	321.9	VID_GRAB	still looking for Hobo probe
99/09/11 21:52:51.00	391840.5	4945937.2	2216.9	1.5	288.8	VID_GRAB	
99/09/11 21:53:25.00	391835.7	4945932.9	2216.9	1.6	293.8	VID_GRAB	fuzzy creatures on worms, zoom in
99/09/11 21:54:10.00	391839.4	4945932.2	2216.9	1.6	301.1	Some kind of fuzz covered worms on scale worms	
99/09/11 21:55:27.00	391849.0	4945922.6	2216.9	1.6	297.0	Going to try and sample the fuzzy guys!	
99/09/11 21:58:34.00	391899.5	4945855.4	2214.6	4.2	267.3	VID_GRAB	looking down on bee hives
99/09/11 22:03:09.00	391834.1	4945944.8	2212.2	6.2	155.6	VID_GRAB	Edge of large structure, worms on edge
99/09/11 22:04:26.00	391837.5	4945944.4	2209.1	8.9	217.0	VID_GRAB	HOBO probe?
99/09/11 22:05:32.00	391835.2	4945944.7	2204.4	13.5	202.8	Believe that may be the probe because it was at the right depth	
99/09/11 22:08:58.00	391838.3	4945950.7	2202.7	6.8	198.4	Waiting for Medea to catch up	
99/09/11 22:16:05.00	391831.1	4945951.5	2207.7	10.5	208.3	Medea caught up, back among chimneys	
99/09/11 22:17:01.00	391833.1	4945942.9	2206.4	6.0	157.9	Trying to get back to potential HOBO probe site	
99/09/11 22:18:11.00	391835.3	4945952.7	2203.5	3.9	191.7	Tons of "smoke", difficult to see Jason from Medea	

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99/09/11 22:20:34.00	391836.0	4945948.4	2208.8	8.3	176.2	VID_GRAB	Lobe sticking out that could be probe?
99/09/11 22:21:12.00	391836.0	4945948.4	2209.4	8.6	219.6	VID_GRAB	Probe?
99/09/11 22:21:37.00	391833.7	4945940.7	2209.0	9.7	225.8	VID_GRAB	No, probably not
99/09/11 22:22:06.00	391833.7	4945940.7	2208.9	8.2	173.0	Heading to 2nd HOBO probe site, ~10 m to the south	
99/09/11 22:24:06.00	391835.5	4945945.4	2201.7	16.1	257.4	Ran into bunch of "smoke"	
99/09/11 22:27:58.00	391835.3	4945940.6	2206.4	6.9	216.2	Heading to a site of two chimneys ~15 m apart	
99/09/11 22:29:21.00	391832.5	4945942.8	2206.4	12.1	78.2	More "smoke"	
99/09/11 22:29:43.00	391829.6	4945934.2	2203.6	15.2	35.2	VID_GRAB	Chimney dead ahead
99/09/11 22:33:40.00	391836.5	4945927.9	2207.8	12.4	278.2	VID_GRAB	Chimney back in view
99/09/11 22:34:06.00	391836.5	4945927.9	2208.4	12.8	219.4	VID_GRAB	Chimneys!
99/09/11 22:35:21.00	391823.1	4945929.4	2208.9	11.8	160.6	VID_GRAB	Tubeworms at top
99/09/11 22:36:21.00	391828.0	4945927.0	2209.1	11.8	301.1	VID_GRAB	Found the probe!
99/09/11 22:36:42.00	391828.0	4945927.0	2210.0	9.2	300.6	VID_GRAB	Probe encrusted with sulfides and worms
99/09/11 22:36:53.00	391824.2	4945919.1	2209.6	11.2	296.5	VID_GRAB	worms and probe
99/09/11 22:37:45.00	391824.2	4945919.1	2209.6	11.2	296.9	VID_GRAB	grabbing for probe
99/09/11 22:38:33.00	391824.3	4945917.2	2209.6	11.1	296.9	Chimney structure has grown a meter since the probe was deployed (1 yr ago)	
99/09/11 22:39:32.00	391824.3	4945917.2	2209.7	11.1	296.6	VID_GRAB	still grabbing'
99/09/11 22:39:47.00	391824.3	4945917.2	2209.6	11.5	294.3	VID_GRAB	
99/09/11 22:40:16.00	391824.3	4945917.2	2209.7	11.1	297.1	VID_GRAB	Chadwick, "Give me back my probe!"
99/09/11 22:40:34.00	391824.3	4945917.2	2209.6	11.1	296.7	VID_GRAB	
99/09/11 22:41:32.00	391824.3	4945917.2	2209.6	11.4	294.4	VID_GRAB	tugging on probe, still no luck
99/09/11 22:42:26.00	391824.3	4945917.2	2209.6	11.3	294.9	VID_GRAB	
99/09/11 22:43:10.00	391824.3	4945917.2	2209.6	11.1	296.5	Trying to pull out the tip, which had been placed in an orifice	
99/09/11 22:45:32.00	391825.5	4945922.1	2209.3	11.5	289.0	VID_GRAB	tugging straight out
99/09/11 22:52:31.00	391826.1	4945925.0	2209.2	11.5	290.7	VID_GRAB	
99/09/11 22:58:03.00	391827.7	4945927.6	2209.0	11.7	282.3	Hobo still stuck	
99/09/11 23:00:57.00	391823.7	4945918.6	2209.0	11.6	260.2		

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99/09/11 23:00:58.00	391823.7	4945918.6	2209.0	11.6	260.2		
99/09/11 23:08:19.00	391827.2	4945927.1	2208.1	11.1	348.0	Gave up trying to retrieve Hobo -- its stuck in there	
99/09/11 23:09:06.00	391825.6	4945929.3	2208.2	10.7	9.1	Looking for a place to put a new Hobo	
99/09/11 23:11:56.00	391826.5	4945932.6	2208.5	10.4	21.6	VID_GRAB	
99/09/11 23:12:12.00	391826.5	4945932.6	2208.8	10.0	28.4	VID_GRAB	trying to set up site for new hobo
99/09/11 23:13:00.00	391824.2	4945928.5	2208.7	10.9	27.8	VID_GRAB	
99/09/11 23:18:15.00	391825.0	4945927.4	2209.1	9.0	67.3	VID_GRAB	possible site for a new hobo?
99/09/11 23:20:00.00	391825.1	4945927.2	2209.1	8.8	62.4	slightly below the old site	
99/09/11 23:21:04.00	391825.3	4945926.9	2209.1	8.8	62.7	VID_GRAB	taking out the new hobo from the basket
99/09/11 23:22:11.00	391825.4	4945926.7	2209.1	9.2	62.8	Deploying Hobo 134	
99/09/11 23:22:14.00	391826.7	4945932.0	2209.0	9.3	62.8	VID_GRAB	
99/09/11 23:22:47.00	391824.7	4945924.9	2209.0	8.9	62.7	VID_GRAB	Deploying Hobo 134
99/09/11 23:24:42.00	391825.3	4945928.7	2209.0	9.3	62.9	VID_GRAB	
99/09/11 23:24:48.00	391825.3	4945928.7	2209.0	9.2	63.1	VID_GRAB	
99/09/11 23:25:34.00	391825.7	4945927.0	2209.0	8.9	63.0	Medea fixes are looking bad	
99/09/11 23:26:42.00	391826.0	4945929.3	2209.0	9.2	63.2	VID_GRAB	
99/09/11 23:28:27.00	391823.7	4945924.6	2209.0	9.2	62.8	VID_GRAB	freeing Hobo probe from basket
99/09/11 23:29:50.00	391826.4	4945929.0	2209.0	9.2	62.9	VID_GRAB	
99/09/11 23:43:07.00	391828.9	4945929.8	2208.5	12.0	277.3	VID_GRAB	
99/09/11 23:43:14.00	391827.5	4945927.9	2208.4	12.2	276.3	VID_GRAB	
99/09/11 23:43:32.00	391827.5	4945927.9	2208.1	12.6	277.2	VID_GRAB	Still trying to deploy hobo 2
99/09/11 23:46:21.00	391827.3	4945928.6	2208.9	11.4	271.1	VID_GRAB	
99/09/11 23:50:16.00	391828.1	4945930.8	2208.9	11.4	271.0	VID_GRAB	
99/09/11 23:50:20.00	391828.1	4945930.8	2208.9	11.5	270.9	VID_GRAB	
99/09/11 23:50:36.00	391828.1	4945930.8	2209.0	11.4	271.0	VID_GRAB	
99/09/11 23:51:30.00	391827.8	4945928.1	2209.3	11.2	268.6	VID_GRAB	
99/09/11 23:51:47.00	391827.6	4945929.8	2209.3	10.9	269.1	VID_GRAB	
99/09/11 23:52:04.00	391827.0	4945929.4	2209.3	11.0	269.3	VID_GRAB	
99/09/11 23:52:26.00	391827.9	4945927.7	2209.3	10.8	270.3	VID_GRAB	
99/09/11 23:52:38.00	391827.5	4945929.7	2209.4	11.1	270.6	VID_GRAB	Deploying 2nd probe
99/09/11 23:52:43.00	391827.5	4945929.7	2209.4	10.9	270.5	VID_GRAB	
99/09/11 23:54:12.00	391828.9	4945928.6	2209.3	10.9	270.5	VID_GRAB	
99/09/11 23:55:04.00	391827.2	4945929.5	2209.2	11.0	270.7	VID_GRAB	
99/09/11 23:55:06.00	391827.2	4945929.5	2209.2	11.0	270.5	VID_GRAB	
99/09/11 23:55:52.00	391825.5	4945923.3	2209.2	11.2	270.6	VID_GRAB	

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99/09/11 23:56:16.00	391826.6	4945930.7	2209.2	10.2	270.8	VID_GRAB	134 sort of deployed, trying to decide whether probe is really in vent
99/09/11 23:58:52.00	391827.6	4945929.7	2209.3	10.7	270.5	fixing the position of Hobo134	
99/09/12 00:03:16.00	391825.8	4945926.7	2208.7	9.4	0.4	repositioning the Jason (the hobo can not be placed from the current position)	
99/09/12 00:04:38.00	391821.5	4945919.2	2208.5	10.9	27.4	Jason repositioned on the other side and trying to place the hobo 134	
99/09/12 00:10:45.00	391823.8	4945928.0	2208.4	11.0	27.6	VID_GRAB	trying to position the 134
99/09/12 00:15:23.00	391822.5	4945925.0	2208.4	11.1	28.1	VID_GRAB	
99/09/12 00:15:43.00	391822.5	4945925.0	2208.4	11.1	27.8	VID_GRAB	Still working on Hobo134
99/09/12 00:16:25.00	391822.5	4945925.0	2208.4	11.1	28.0	VID_GRAB	
99/09/12 00:16:54.00	391825.0	4945931.2	2208.4	11.0	27.7	VID_GRAB	
99/09/12 00:17:31.00	391823.0	4945923.8	2208.4	11.0	27.7	VID_GRAB	
99/09/12 00:33:23.00	391824.0	4945930.7	2208.3	10.9	23.7	VID_GRAB	
99/09/12 00:33:55.00	391823.6	4945930.3	2208.3	11.0	23.4	VID_GRAB	
99/09/12 00:34:07.00	391823.6	4945930.3	2208.3	10.5	23.8	VID_GRAB	
99/09/12 00:34:26.00	391823.6	4945930.3	2208.3	10.4	25.1	VID_GRAB	
99/09/12 00:35:12.00	391823.6	4945930.3	2208.3	10.6	23.6	VID_GRAB	
99/09/12 00:35:13.00	391823.6	4945930.3	2208.3	10.6	23.5	VID_GRAB	
99/09/12 00:35:18.00	391823.6	4945930.3	2208.3	10.5	23.3	VID_GRAB	
99/09/12 00:35:32.00	391823.6	4945930.3	2208.3	10.6	23.4	VID_GRAB	
99/09/12 00:36:46.00	391823.6	4945930.3	2208.3	10.5	23.2	VID_GRAB	Hobo 134 deployed
99/09/12 00:37:16.00	391823.6	4945930.3	2208.3	10.9	22.7	Will try putting it in farther	
99/09/12 00:38:23.00	391823.6	4945930.3	2208.2	10.6	23.0	VID_GRAB	
99/09/12 00:39:09.00	391823.6	4945930.3	2208.2	10.0	24.0	VID_GRAB	
99/09/12 00:39:32.00	391823.6	4945930.3	2208.2	10.6	22.6	VID_GRAB	
99/09/12 00:39:48.00	391823.6	4945930.3	2208.2	10.7	22.6	Hobo 134 put farther in orifice	
99/09/12 00:40:28.00	391823.6	4945930.3	2208.3	9.5	22.9	VID_GRAB	
99/09/12 00:40:34.00	391823.6	4945930.3	2208.3	9.9	22.9	VID_GRAB	
99/09/12 00:40:37.00	391823.6	4945930.3	2208.3	9.6	22.8	VID_GRAB	
99/09/12 00:40:51.00	391823.6	4945930.3	2208.3	9.9	22.9	VID_GRAB	Hobo 134 deployed
99/09/12 00:41:55.00	391823.6	4945930.3	2208.3	10.6	23.0	VID_GRAB	
99/09/12 00:41:58.00	391823.6	4945930.3	2208.3	9.9	22.8	VID_GRAB	
99/09/12 00:47:19.00	391821.1	4945922.4	2208.9	10.1	71.1	VID_GRAB	
99/09/12 00:47:24.00	391821.1	4945922.4	2208.9	10.1	71.3	VID_GRAB	
99/09/12 00:47:25.00	391821.1	4945922.4	2208.9	10.1	71.2	VID_GRAB	
99/09/12 00:47:40.00	391823.9	4945930.0	2208.9	10.0	71.2	VID_GRAB	

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99/09/12 01:06:22.00	391819.8	4945925.3	2217.5	1.4	50.9	We will be beginning a plume survey with SM2000
99/09/12 01:06:49.00	391819.8	4945925.3	2217.6	1.4	50.5	Moving back to the first chimney, 15m north, back to first smoker
99/09/12 01:09:09.00	391819.8	4945925.3	2213.3	5.6	42.6	VID_GRAB
99/09/12 01:09:12.00	391819.8	4945925.3	2213.4	5.7	41.1	VID_GRAB
99/09/12 01:09:20.00	391819.8	4945925.3	2213.3	5.7	40.1	VID_GRAB
99/09/12 01:09:24.00	391819.8	4945925.3	2213.3	5.7	40.2	VID_GRAB
99/09/12 01:09:25.00	391819.8	4945925.3	2213.3	5.7	40.3	VID_GRAB
99/09/12 01:09:28.00	391819.8	4945925.3	2213.3	5.7	39.9	VID_GRAB
99/09/12 01:09:29.00	391819.8	4945925.3	2213.3	5.7	39.9	VID_GRAB
99/09/12 01:09:30.00	391819.8	4945925.3	2213.2	5.7	40.2	VID_GRAB
99/09/12 01:09:46.00	391819.8	4945925.3	2213.3	5.5	29.8	VID_GRAB
99/09/12 01:09:46.00	391819.8	4945925.3	2213.3	5.5	30.0	VID_GRAB
99/09/12 01:09:48.00	391819.8	4945925.3	2213.3	5.6	30.5	VID_GRAB
99/09/12 01:09:49.00	391819.8	4945925.3	2213.3	5.7	30.3	VID_GRAB
99/09/12 01:09:51.00	391819.8	4945925.3	2213.3	5.6	29.1	VID_GRAB
99/09/12 01:09:54.00	391819.8	4945925.3	2213.3	5.6	28.9	VID_GRAB
99/09/12 01:09:57.00	391819.8	4945925.3	2213.3	5.2	28.8	VID_GRAB
99/09/12 01:09:58.00	391819.8	4945925.3	2213.3	5.2	28.7	VID_GRAB
99/09/12 01:09:59.00	391819.8	4945925.3	2213.3	5.1	28.7	VID_GRAB
99/09/12 01:10:00.00	391819.8	4945925.3	2213.3	5.2	28.7	VID_GRAB
99/09/12 01:10:02.00	391819.8	4945925.3	2213.3	5.0	28.2	VID_GRAB
99/09/12 01:10:03.00	391819.8	4945925.3	2213.3	5.0	28.5	VID_GRAB
99/09/12 01:10:04.00	391819.8	4945925.3	2213.3	5.0	28.7	VID_GRAB
99/09/12 01:10:04.00	391819.8	4945925.3	2213.3	4.4	28.7	VID_GRAB
99/09/12 01:10:05.00	391819.8	4945925.3	2213.3	5.3	28.7	VID_GRAB
99/09/12 01:10:06.00	391819.8	4945925.3	2213.4	5.3	28.8	VID_GRAB
99/09/12 01:10:08.00	391819.8	4945925.3	2213.4	5.4	29.8	VID_GRAB
99/09/12 01:10:10.00	391819.8	4945925.3	2213.4	4.2	25.6	VID_GRAB
99/09/12 01:10:11.00	391819.8	4945925.3	2213.4	5.3	23.5	VID_GRAB
99/09/12 01:10:12.00	391819.8	4945925.3	2213.3	5.4	21.5	VID_GRAB
99/09/12 01:10:12.00	391819.8	4945925.3	2213.3	5.4	20.6	VID_GRAB
99/09/12 01:10:13.00	391819.8	4945925.3	2213.3	5.4	20.3	VID_GRAB
99/09/12 01:10:14.00	391819.8	4945925.3	2213.3	5.1	20.6	VID_GRAB
99/09/12 01:10:15.00	391819.8	4945925.3	2213.4	1.9	20.1	VID_GRAB
99/09/12 01:10:16.00	391819.8	4945925.3	2213.3	5.5	19.2	VID_GRAB
99/09/12 01:10:17.00	391819.8	4945925.3	2213.3	5.5	18.4	VID_GRAB
99/09/12 01:10:20.00	391819.8	4945925.3	2213.1	5.2	17.0	VID_GRAB
99/09/12 01:10:23.00	391819.8	4945925.3	2213.2	5.1	16.2	VID_GRAB
99/09/12 01:10:25.00	391819.8	4945925.3	2213.3	5.1	16.8	VID_GRAB
99/09/12 01:10:27.00	391819.8	4945925.3	2213.3	5.1	16.6	VID_GRAB
99/09/12 01:10:46.00	391819.8	4945925.3	2212.6	6.0	23.3	Neat little smoker venting nearly clear fluid
99/09/12 01:11:59.00	391823.9	4945926.3	2208.3	9.8	29.5	VID_GRAB
99/09/12 01:12:27.00	391823.8	4945929.8	2208.1	10.4	54.9	VID_GRAB
99/09/12 01:12:31.00	391823.8	4945929.8	2208.1	10.2	56.6	VID_GRAB

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99/09/12 01:13:37.00	391823.1	4945930.4	2207.3	11.6	54.2	Those images were back at the southern smoker, w/ hobo134
99/09/12 01:13:44.00	391823.1	4945930.4	2207.2	11.7	43.9	moving north to other smoker
99/09/12 01:21:48.00	391816.0	4945931.4	2207.2	12.6	75.5	Approaching the smoker, SM2000 scanning
99/09/12 01:29:22.00	391824.2	4945941.0	2208.4	11.3	51.7	Situated ~20m away from the smokers, imaging plume, video will be boring
99/09/12 01:32:07.00	391812.7	4945937.3	2208.4	10.3	57.8	Beginning the EM2000 plume survey now
99/09/12 01:32:45.00	391811.9	4945938.0	2208.3	10.3	58.1	Will sit for 2 mins at each altitude, will rise 2m, etc. to top of plume
99/09/12 01:33:07.00	391810.6	4945937.8	2208.3	10.3	57.9	SM2000 died just after starting. Rebooting
99/09/12 01:33:53.00	391811.7	4945937.5	2208.4	10.3	58.1	Video tapes stopped at 01:33
99/09/12 01:38:06.00	391812.5	4945938.5	2208.4	10.2	58.2	Starting EM2000 plume survey
99/09/12 01:39:17.00	391811.8	4945937.5	2208.4	10.3	58.2	Correction, will sit at each alt. for 1min, then up 2m.
99/09/12 01:39:24.00	391811.8	4945937.5	2208.4	10.3	57.9	Move up one 1m
99/09/12 01:40:49.00	391812.7	4945938.3	2208.4	10.3	57.8	Didn't come up before
99/09/12 01:40:52.00	391812.7	4945938.3	2208.4	10.3	57.7	Up 4m
99/09/12 01:41:12.00	391812.8	4945938.2	2208.3	10.4	58.5	Will move up 4m until we reach top of chimney, then back to 2m jumps
99/09/12 01:42:08.00	391812.9	4945938.3	2204.4	12.6	58.0	4m up
99/09/12 01:42:28.00	391812.9	4945938.3	2204.4	13.9	57.7	above is that we got up the first 4m
99/09/12 01:43:47.00	391811.9	4945937.7	2204.4	13.8	57.8	Move up 4m
99/09/12 01:44:28.00	391812.3	4945937.4	2202.4	15.8	57.7	we're there
99/09/12 01:46:30.00	391812.0	4945937.4	2202.3	15.9	58.4	moving up 2m
99/09/12 01:46:58.00	391811.4	4945936.2	2200.4	12.5	57.8	we're there
99/09/12 01:49:00.00	391812.0	4945937.1	2200.3	16.9	58.0	move up 2m
99/09/12 01:49:59.00	391812.5	4945936.6	2198.4	18.3	79.2	Lost doppler, might not be as smooth
99/09/12 01:50:04.00	391812.5	4945936.6	2198.4	18.5	79.2	we're there
99/09/12 01:52:03.00	391808.2	4945934.5	2198.4	17.0	79.3	up 2m
99/09/12 01:52:29.00	391808.2	4945934.5	2197.0	18.6	81.6	we're there
99/09/12 01:52:45.00	391808.7	4945934.1	2197.3	18.2	79.0	above is a mistake
99/09/12 01:53:03.00	391808.7	4945934.1	2196.3	19.3	80.9	now we're there
99/09/12 01:55:03.00	391808.2	4945936.1	2196.6	18.9	79.1	up 2m
99/09/12 01:55:59.00	391808.1	4945937.0	2194.4	20.6	79.2	we're there
99/09/12 01:58:06.00	391807.1	4945935.7	2194.4	20.8	79.4	up 2m
99/09/12 01:58:34.00	391806.1	4945935.3	2192.4	22.8	79.1	we're there
99/09/12 02:00:44.00	391806.6	4945935.5	2192.4	22.6	79.0	up 2 m

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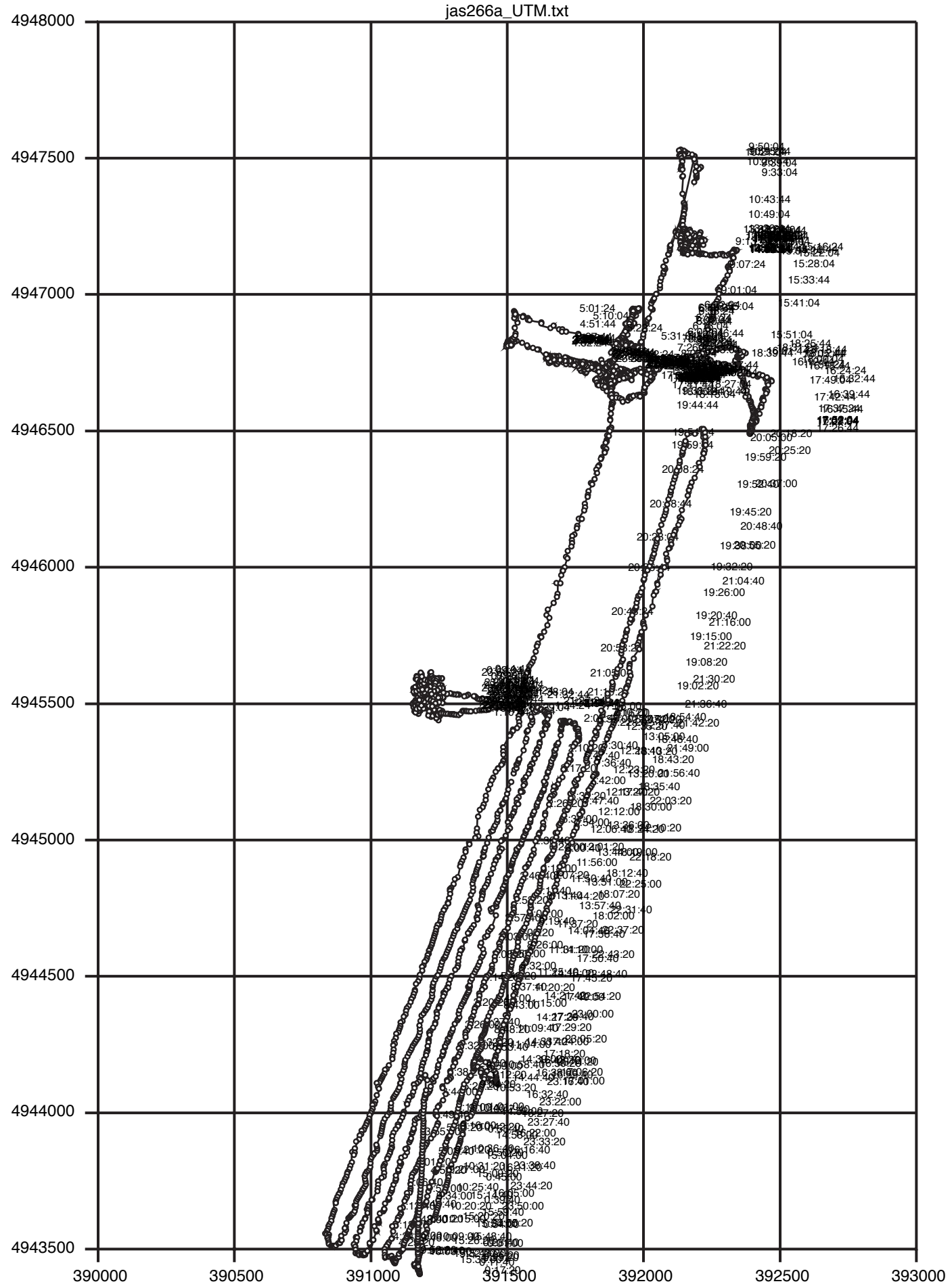
99/09/12 02:01:07.00	391806.6	4945935.5	2190.4	18.3	79.4	we're there
99/09/12 02:01:52.00	391806.6	4945935.5	2190.4	23.9	79.2	SM2000 clock is 18 sec faster than jason clock
99/09/12 02:03:16.00	391807.0	4945935.4	2190.3	24.0	79.0	SM2000 survey complete
99/09/12 02:03:44.00	391807.7	4945936.8	2190.3	23.9	79.0	CORRECTION - EM2000 should always be SM2000
99/09/12 02:04:16.00	391806.8	4945935.4	2190.4	24.2	79.1	END of Dive 265
99/09/12 04:11:04.00	392335.4	4947641.6	0.3	30.0	155.0	VID_GRAB
99/09/12 04:11:16.00	392335.4	4947641.6	0.1	30.0	150.3	medea at the surface
99/09/12 04:20:28.00	392335.4	4947641.6	-0.5	30.0	262.5	Jason on deck. Dive definitely over due to weather

JASON
DIVE 266

September 12-15, 1999

South Cleft


jas266a_UTM.txt
4948000
4947500
4947000
4946500
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4945500
4945000
4944500
4944000
4943500
390000
390500
391000
391500
392000
392500
393000

JASON DIVE 266

Date/Time	UTM X	UTM Y	Depth	Alt	Hdg	Comments	
JAS266							
99/09/12 15:58:49.00	392335.4	4947641.6	-0.4	30.0	263.3	Dive JAS266 ready to roll	
99/09/12 16:03:50.00	392335.4	4947641.6	0.6	2.7	190.1	Medea in the water	
99/09/12 16:04:48.00	392335.4	4947641.6	0.6	0.8	188.8	CORRECTION: Jason in the water, medea is still on deck	
99/09/12 16:05:29.00	392335.4	4947641.6	0.1	30.0	185.9	Medea in the water	
99/09/12 16:07:29.00	383846.9	4945426.9	35.7	30.0	176.7	Jason at 30 meters	
99/09/12 17:30:01.00	391891.6	4946590.5	2167.8	30.0	150.2	medea is stopped	
99/09/12 18:06:30.00	391903.7	4946633.1	2196.8	15.6	136.2	We've been searching for the benchmarks since we reached the bottom	
99/09/12 18:22:22.00	391986.5	4946626.1	2194.8	16.5	213.0	Still searching	
99/09/12 18:24:56.00	392003.5	4946639.5	2195.1	15.9	258.1	turning to hdg 350 for 50 meters. Still looking for the benchmarks....	
99/09/12 18:35:20.00	392041.3	4946721.4	2199.6	11.5	287.1	Heading west about 50 meters. Still looking	
99/09/12 18:44:44.00	391967.2	4946720.2	2200.9	11.6	272.6	Video on at 18:44	
99/09/12 18:45:48.00	391961.9	4946717.5	2203.8	8.9	231.8	There is the first one.	
99/09/12 18:49:36.00	391949.3	4946710.8	2205.9	7.0	239.3	VID_GRAB	Benchmark off in the distance
99/09/12 18:49:56.00	391946.7	4946712.7	2205.8	7.1	239.1	VID_GRAB	Float on benchmark
99/09/12 18:51:20.00	391945.7	4946712.3	2212.2	1.0	238.4	VID_GRAB	Benchmark 9
99/09/12 18:52:02.00	391946.0	4946712.5	2213.1	1.9	246.7	VID_GRAB	crab crawling off of benchmark
99/09/12 18:53:49.00	391946.2	4946713.0	2211.9	1.3	247.8	Released the weights	
99/09/12 18:56:39.00	391942.6	4946712.5	2210.2	2.9	303.1	VID_GRAB	hooked benchmark for relocation
99/09/12 19:06:18.00	391911.0	4946710.5	2209.5	3.7	249.4	Still traversing to the west	
99/09/12 19:12:29.00	391887.8	4946690.2	2213.6	0.8	182.2	On lobate sheet flows	
99/09/12 19:12:35.00	391886.3	4946687.9	2213.3	1.1	184.2	Dropped benchmark	
99/09/12 19:12:49.00	391886.3	4946687.9	2213.3	1.1	185.3	Not flat enough, going to move slightly	
99/09/12 19:16:57.00	391885.7	4946689.0	2213.4	1.1	189.2	Picked up benchmark, moving again	
99/09/12 19:19:12.00	391880.2	4946677.3	2214.3	0.7	171.5	VID_GRAB	Benchmark 9 placed on broad lobe
99/09/12 19:19:19.00	391880.2	4946677.3	2213.8	0.8	173.7	VID_GRAB	
99/09/12 19:20:05.00	391885.3	4946682.9	2213.1	1.4	175.2	VID_GRAB	far away view of benchmark 9
99/09/12 19:25:08.00	391885.0	4946680.0	2214.6	30.0	175.8	VID_GRAB	testing stability of benchmark 9
99/09/12 19:25:28.00	391885.0	4946680.0	2213.4	1.1	234.5	Slightly adjusting position again	

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99/09/12 19:25:51.00	391881.9	4946678.3	2211.2	3.5	356.7	Hmmm...we are moving it completely...stand by...	
99/09/12 19:28:41.00	391890.2	4946683.3	2214.4	30.0	118.6	VID_GRAB	New location, closer to target position
99/09/12 19:28:49.00	391890.2	4946683.3	2214.4	30.0	118.4	Not flat enough	
99/09/12 19:30:59.00	391891.9	4946684.9	2213.5	1.2	99.3	VID_GRAB	Found a good flat spot
99/09/12 19:31:55.00	391886.9	4946679.2	2214.0	0.8	157.8	VID_GRAB	Final spot for benchmark 9
99/09/12 19:35:15.00	391892.2	4946683.9	2214.4	30.0	153.3	VID_GRAB	Pressure sensor in claw
99/09/12 19:38:09.00	391889.7	4946678.7	2214.4	30.0	252.7	VID_GRAB	Pressure sensor in position on benchmark 9
99/09/12 19:48:14.00	391890.2	4946679.0	2214.5	30.0	252.1	All done!	
99/09/12 19:49:48.00	391888.7	4946677.2	2214.5	30.0	251.3	Pressure sensor back in place on Jason	
99/09/12 19:51:06.00	391886.7	4946675.3	2212.2	2.4	253.5	Heading back to pick up benchmark 10	
99/09/12 19:57:10.00	391917.6	4946706.1	2211.9	2.2	74.2	VID_GRAB	Benchmark 11
99/09/12 19:57:20.00	391917.6	4946706.1	2211.3	2.9	74.6	VID_GRAB	Benchmark 11
99/09/12 19:59:39.00	391925.9	4946708.2	2213.2	0.9	101.3	VID_GRAB	Benchmark 10!
99/09/12 20:00:19.00	391940.1	4946701.5	2213.9	1.4	77.7	VID_GRAB	original drop site of benchmark 10
99/09/12 20:06:20.00	391935.8	4946700.3	2212.0	3.3	71.7	VID_GRAB	Benchmark 10
99/09/12 20:14:18.00	391942.9	4946702.2	2214.8	1.4	43.9	VID_GRAB	pulled weights free
99/09/12 20:14:28.00	391942.9	4946702.2	2214.7	30.0	44.0	VID_GRAB	slip ring from weights
99/09/12 20:18:09.00	391943.0	4946702.0	2213.4	1.0	85.6	VID_GRAB	Trying to grab ring for relocation
99/09/12 20:20:31.00	391943.3	4946701.2	2209.0	5.3	38.8	VID_GRAB	Will twists the rope and threads the needle, what a master!
99/09/12 20:45:47.00	391790.3	4946737.7	2205.4	9.3	257.2	Changed tapes at 2042	
99/09/12 20:50:28.00	391778.9	4946733.5	2206.5	8.0	227.1	Going back down to the bottom	
99/09/12 20:51:03.00	391779.1	4946735.2	2213.1	1.7	228.8	Back on the bottom	
99/09/12 20:55:43.00	391770.6	4946732.3	2212.0	4.5	98.7	Still looking for island of sheet flow to place benchmark on	
99/09/12 21:00:44.00	391759.8	4946714.8	2211.6	3.4	249.3	VID_GRAB	cool biota!
99/09/12 21:03:57.00	391763.0	4946725.0	2212.8	2.2	106.0	VID_GRAB	purple jellyfish
99/09/12 21:05:56.00	391787.1	4946711.8	2213.3	1.4	59.2	VID_GRAB	crab on transition from jumbled to ropy flow

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99/09/12 21:08:34.00	391784.6	4946734.1	2213.5	1.5	311.5	Still looking for the perfect spot for benchmark 10	
99/09/12 21:09:56.00	391779.1	4946740.7	2211.9	2.4	341.4	Found some lobes, this could be the spot	
99/09/12 21:16:41.00	391774.6	4946743.6	2214.5	1.3	78.6	Picking up the benchmark and moving it a bit	
99/09/12 21:18:31.00	391774.3	4946741.2	2214.4	0.8	357.9	VID_GRAB	
99/09/12 21:18:44.00	391778.0	4946743.3	2214.4	0.8	357.9	Still adjusting its position	
99/09/12 21:21:13.00	391771.6	4946737.9	2214.3	0.8	347.4	VID_GRAB	Final spot for benchmark 10
99/09/12 21:23:24.00	391773.6	4946739.9	2214.4	30.0	350.7	VID_GRAB	Really final position for benchmark 10!!!
99/09/12 21:27:27.00	391776.0	4946740.1	2214.4	30.0	347.6	Pressure sensor in place, begin measurement	
99/09/12 21:38:07.00	391771.8	4946738.1	2214.4	30.0	342.4	End of measurement	
99/09/12 21:40:30.00	391777.2	4946741.4	2214.4	30.0	341.3	Pressure sensor back in place on Jason	
99/09/12 21:41:30.00	391778.2	4946742.3	2214.4	1.6	341.2	Off to pick up benchmark 11	
99/09/12 22:02:01.00	391921.1	4946714.3	2208.5	6.3	118.3	benchmark in sight	
99/09/12 22:02:42.00	391921.6	4946713.2	2212.5	2.3	128.0	VID_GRAB	benchmark 11
99/09/12 22:03:16.00	391927.6	4946706.0	2213.7	1.1	108.0	VID_GRAB	At benchmark 11's drop site, getting ready to release weights
99/09/12 22:03:24.00	391927.6	4946706.0	2213.9	0.9	106.8	VID_GRAB	
99/09/12 22:08:46.00	391934.1	4946707.1	2214.4	30.0	293.4	VID_GRAB	making the approach to grab the slip ring and release weights
99/09/12 22:11:21.00	391934.1	4946707.1	2214.4	30.0	290.2	VID_GRAB	released weights
99/09/12 22:12:22.00	391934.1	4946707.6	2211.1	3.4	324.6	benchmark 11 in tow	
99/09/12 22:44:59.00	391693.0	4946773.3	2204.1	2.3	263.2	Changed tapes at 2242	
99/09/12 22:53:35.00	391645.2	4946766.7	2215.3	1.1	104.3	VID_GRAB	
99/09/12 22:54:52.00	391644.1	4946767.6	2215.3	1.1	100.5	Paroscientific dropped	
99/09/12 22:59:34.00	391646.7	4946770.1	2211.3	5.2	110.7	Trying to position benchmark up on a mound	
99/09/12 23:00:21.00	391651.0	4946773.1	2213.1	2.4	111.6	VID_GRAB	
99/09/12 23:00:25.00	391651.0	4946773.1	2213.3	2.2	110.6	VID_GRAB	
99/09/12 23:01:46.00	391651.0	4946773.1	2214.6	0.9	105.8	VID_GRAB	
99/09/12 23:02:47.00	391657.1	4946772.2	2214.4	1.1	107.0	VID_GRAB	
99/09/12 23:03:00.00	391657.1	4946772.2	2213.4	1.9	108.0	VID_GRAB	Moving benchmark
99/09/12 23:04:17.00	391652.6	4946766.5	2213.4	1.2	142.0	VID_GRAB	
99/09/12 23:04:20.00	391652.6	4946766.5	2213.4	1.2	142.7	VID_GRAB	
99/09/12 23:04:40.00	391656.1	4946768.1	2213.1	1.4	143.2	VID_GRAB	
99/09/12 23:05:02.00	391656.1	4946768.1	2213.1	1.5	149.9	VID_GRAB	
99/09/12 23:05:10.00	391656.1	4946768.1	2213.3	1.2	156.1	VID_GRAB	

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99/09/12 23:05:23.00	391651.5	4946765.9	2213.6	1.4	147.6	VID_GRAB	benchmark 11 in place
99/09/12 23:06:00.00	391656.5	4946769.2	2213.9	0.7	129.8	VID_GRAB	
99/09/12 23:06:06.00	391656.5	4946769.2	2214.1	0.7	126.7	VID_GRAB	
99/09/12 23:06:48.00	391656.8	4946768.4	2213.7	0.9	201.8	VID_GRAB	
99/09/12 23:08:42.00	391654.2	4946763.9	2214.3	1.5	203.0	VID_GRAB	
99/09/12 23:09:00.00	391657.9	4946766.7	2214.3	1.9	203.2	Preparing to take paroscientific reading on benchmark 11	
99/09/12 23:17:01.00	391655.1	4946764.1	2214.4	30.0	221.2	VID_GRAB	
99/09/12 23:17:15.00	391655.1	4946764.1	2214.4	30.0	221.2	VID_GRAB	taking paroscientific
99/09/12 23:17:30.00	391655.1	4946764.1	2214.4	30.0	221.3	VID_GRAB	benchmark 11, parosci. reading
99/09/12 23:23:15.00	391656.6	4946764.7	2214.3	30.0	220.2	VID_GRAB	
99/09/12 23:28:19.00	391656.6	4946764.7	2214.3	30.0	219.6	x=391656 y = 4946765 position for benchmark 11	
99/09/12 23:43:02.00	391724.5	4946740.3	2210.0	6.5	98.7	Driving back to pick up Benchmark #5	
99/09/12 23:43:53.00	391742.3	4946745.0	2210.1	6.3	105.3	Correction: getting benchmark 12 (not 5)	
99/09/13 00:58:43.00	391873.5	4946689.4	2211.9	2.7	252.4	Finally found benchmark #12!	
99/09/13 01:00:00.00	391869.8	4946688.1	2213.1	1.4	219.3	VID_GRAB	
99/09/13 01:00:12.00	391869.8	4946688.1	2213.9	0.7	219.6	VID_GRAB	Benchmark 12
99/09/13 01:00:20.00	391870.5	4946689.0	2214.1	1.1	212.2	VID_GRAB	
99/09/13 01:00:24.00	391870.5	4946689.0	2214.3	0.7	211.4	VID_GRAB	
99/09/13 01:02:26.00	391868.6	4946688.5	2214.5	30.0	209.1	VID_GRAB	Removing pin to weight
99/09/13 01:02:33.00	391868.6	4946688.5	2214.5	30.0	208.9	Weight removed	
99/09/13 01:03:28.00	391869.3	4946688.9	2214.5	30.0	208.9	Plan is to move to BM9, remove ball, on to BM10, rm ball, on to 11, rm ball, on to position 12	
99/09/13 01:15:35.00	391890.3	4946681.2	2214.3	30.0	59.9	Moving to cut float from BM # 9	
99/09/13 01:17:57.00	391885.0	4946677.5	2214.2	30.0	60.2	VID_GRAB	
99/09/13 01:18:09.00	391885.0	4946677.5	2214.2	1.8	60.2	VID_GRAB	
99/09/13 01:19:31.00	391885.0	4946677.5	2214.2	0.7	61.1	VID_GRAB	
99/09/13 01:23:48.00	391885.7	4946679.2	2213.9	1.6	45.5	VID_GRAB	
99/09/13 01:24:25.00	391889.2	4946681.7	2214.3	30.0	43.8	Float removed from #9	
99/09/13 01:30:27.00	391893.0	4946676.6	2208.9	5.1	171.8	Moving on to BM10, carrying BM12	
99/09/13 01:47:15.00	391784.3	4946741.1	2209.5	4.5	297.1	Approaching BM10	
99/09/13 01:52:50.00	391776.3	4946746.6	2213.0	1.6	296.1	Moving to cut line to float on BM10	
99/09/13 01:56:10.00	391775.0	4946743.5	2213.1	1.5	295.9	Float released from BM10 015550	
99/09/13 02:10:58.00	391774.7	4946750.5	2209.6	4.9	94.4	Moving on to BM11, carrying #12	

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99/09/13 02:28:50.00	391671.2	4946761.0	2205.0	9.5	295.7	Approaching BM11	
99/09/13 02:32:32.00	391650.7	4946769.7	2212.6	0.8	315.7	VID_GRAB	Moving to cut float from BM11
99/09/13 02:32:42.00	391651.7	4946769.8	2212.5	0.8	314.8	VID_GRAB	
99/09/13 02:35:19.00	391649.6	4946768.3	2212.8	0.7	317.3	VID_GRAB	
99/09/13 02:35:40.00	391649.6	4946768.3	2212.8	0.7	317.2	Float released from BM11 from 023515	
99/09/13 02:38:12.00	391655.0	4946770.6	2211.1	1.9	331.8	Moving to deploy BM12	
99/09/13 02:44:46.00	391648.1	4946765.8	2203.3	9.3	303.0	Small boat coming back to the ship.	
99/09/13 02:47:01.00	391642.6	4946780.4	2203.1	12.0	300.6	Small boat recovered 3 glass balls.	
99/09/13 02:52:08.00	391609.8	4946799.1	2198.8	10.0	289.7	VID_GRAB	step up to the wall
99/09/13 02:56:34.00	391572.6	4946813.7	2196.0	13.2	290.8	VID_GRAB	wall
99/09/13 02:57:38.00	391554.4	4946822.8	2191.3	10.4	293.9	VID_GRAB	pillar
99/09/13 02:58:17.00	391554.4	4946822.8	2188.5	12.9	297.4	VID_GRAB	pillar? was old chimney?
99/09/13 03:03:13.00	391525.9	4946838.7	2192.7	7.9	295.6	VID_GRAB	
99/09/13 03:04:53.00	391517.3	4946837.2	2192.6	8.4	194.6	VID_GRAB	fissure
99/09/13 03:05:20.00	391517.8	4946834.7	2192.6	6.5	153.9	VID_GRAB	
99/09/13 03:05:38.00	391518.8	4946834.3	2192.7	6.2	88.0	VID_GRAB	looking into the cleft
99/09/13 03:06:56.00	391515.6	4946826.1	2192.3	6.3	278.6	VID_GRAB	
99/09/13 03:11:03.00	391503.9	4946829.8	2194.8	2.1	271.2	moving the benchmark12	
99/09/13 03:11:15.00	391502.1	4946829.4	2195.3	1.8	271.3	VID_GRAB	
99/09/13 03:12:10.00	391501.6	4946827.1	2194.8	1.9	187.3	VID_GRAB	area for benchmark 12
99/09/13 03:13:03.00	391502.2	4946823.8	2193.9	2.6	159.8	VID_GRAB	
99/09/13 03:21:28.00	391500.0	4946819.1	2194.8	1.6	182.1	VID_GRAB	
99/09/13 03:21:53.00	391503.4	4946822.6	2194.8	1.7	182.2	VID_GRAB	positioning BM12
99/09/13 03:24:59.00	391503.6	4946822.8	2195.9	0.9	176.2	VID_GRAB	fissure
99/09/13 03:26:34.00	391502.3	4946821.4	2196.0	30.0	169.8	VID_GRAB	benchmark 12 in place?
99/09/13 03:34:06.00	391497.8	4946816.6	2195.8	30.0	173.9	VID_GRAB	BM12 with pressure sensor
99/09/13 03:34:37.00	391497.0	4946817.0	2195.8	30.0	173.8	0334 start pressure sensor	
99/09/13 03:44:26.00	391501.4	4946820.1	2195.8	30.0	173.6	Finish with pressure sensor reading	
99/09/13 03:49:27.00	391500.9	4946820.5	2193.0	3.2	185.0	VID_GRAB	
99/09/13 03:49:59.00	391505.4	4946823.4	2194.6	1.4	352.6	VID_GRAB	
99/09/13 03:50:15.00	391505.4	4946823.4	2195.3	6.7	265.1	VID_GRAB	
99/09/13 03:50:46.00	391503.6	4946820.2	2194.5	6.8	263.1	VID_GRAB	BM12 on lobate? or huge pillow
99/09/13 03:56:48.00	391507.8	4946824.3	2192.6	4.9	230.3	Bill is going to drive for a moment	
99/09/13 04:00:01.00	391506.1	4946818.0	2194.7	4.9	295.8	VID_GRAB	Bill is driving right now

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99/09/13 04:06:42.00	391505.2	4946821.6	2194.6	7.0	237.9	VID_GRAB	Big fissure (controlled by our special pilot, Bill Chadwick!)
99/09/13 04:08:33.00	391504.4	4946820.8	2195.8	1.2	277.7	VID_GRAB	Nice close up of pillow lava.
99/09/13 04:10:08.00	391497.8	4946814.0	2195.9	0.8	276.6	VID_GRAB	Close up of pillow lava.
99/09/13 04:14:48.00	391505.2	4946821.0	2194.0	6.8	244.7	Intermission (acoustic test of extensometers using CTD wire is being conducted on the ship.) Stop the video.	
99/09/13 04:18:19.00	391503.2	4946818.0	2194.0	6.8	244.6	VID_GRAB	testing
99/09/13 04:18:33.00	391503.2	4946818.0	2194.0	6.8	244.6	VID_GRAB	
99/09/13 04:24:12.00	391505.9	4946821.7	2194.0	6.6	244.9	FYI: benchmark#12 position. x=391498 y=4946817	
99/09/13 04:30:51.00	391502.8	4946813.4	2193.9	3.9	136.7	VID_GRAB	beautiful shot of fissure
99/09/13 04:31:16.00	391502.0	4946814.8	2193.9	4.0	118.4	VID_GRAB	
99/09/13 04:32:20.00	391502.0	4946814.8	2193.9	4.4	210.2	VID_GRAB	up on the wall in area of benchmark12
99/09/13 04:43:37.00	391507.3	4946805.9	2194.0	6.4	23.9	Heading to SOL 99-12 for Imagenex work	
99/09/13 04:47:02.00	391524.4	4946843.2	2196.9	5.3	341.0	VID_GRAB	
99/09/13 04:47:07.00	391524.4	4946843.2	2196.8	5.4	342.1	VID_GRAB	
99/09/13 04:47:14.00	391524.4	4946843.2	2196.8	5.3	341.8	VID_GRAB	
99/09/13 04:47:43.00	391524.3	4946844.4	2196.6	5.3	353.5	VID_GRAB	Sea star of some type. Very beautiful
99/09/13 05:00:37.00	391525.2	4946939.1	2197.0	4.7	2.5	Changing heads for Imagenex survey.	
99/09/13 05:04:48.00	391526.6	4946925.8	2177.9	25.2	103.5	SOL 99-12 really this time	
99/09/13 05:43:30.00	391985.3	4946784.3	2187.1	24.8	101.7	EOL 99-12	
99/09/13 05:44:49.00	391988.4	4946780.1	2186.9	25.4	286.7	Trying to find USGS#2 next.	
99/09/13 05:48:09.00	391979.3	4946780.7	2205.2	7.4	292.6	Heading back down to the bottom	
99/09/13 05:52:16.00	391958.2	4946811.3	2209.6	3.3	285.4	Restart the videos	
99/09/13 06:04:35.00	391922.8	4946849.4	2207.7	5.6	297.6	Still looking for USGS tower	
99/09/13 06:22:00.00	391944.7	4946888.8	2208.9	4.6	287.2	Switched video at 0616	
99/09/13 06:22:10.00	391944.7	4946888.8	2209.0	4.5	287.2	Still looking for the tower	
99/09/13 06:54:03.00	391980.0	4946949.2	2210.2	3.9	251.5	Turning around; still no luck	
99/09/13 07:08:41.00	391935.8	4946867.7	2211.1	3.1	191.0	VID_GRAB	sponges on edge of rock...covered!

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99/09/13 07:10:17.00	391922.9	4946850.5	2211.6	2.5	192.5	VID_GRAB	sponge colony
99/09/13 07:40:17.00	391844.0	4946739.4	2211.8	2.0	118.1	Still driving south looking for tripod	
99/09/13 07:41:31.00	391853.5	4946727.2	2212.1	1.6	10.0	VID_GRAB	collapse pillars
99/09/13 07:41:39.00	391855.7	4946730.7	2212.0	1.6	340.4	VID_GRAB	skylight
99/09/13 07:41:47.00	391855.7	4946730.7	2212.0	1.9	319.0	VID_GRAB	skylight
99/09/13 07:45:11.00	391849.4	4946750.3	2211.1	4.4	122.0	VID_GRAB	sponge colony
99/09/13 07:56:51.00	391882.9	4946739.2	2210.2	3.5	144.1	Heading NW	
99/09/13 08:12:15.00	391914.2	4946815.4	2210.2	3.9	43.6	Back north at imagenex line, still looking for tower though	
99/09/13 08:22:45.00	391936.0	4946824.3	2207.6	6.6	128.9	Changed tapes at 0818	
99/09/13 08:24:42.00	391940.2	4946821.0	2207.6	6.7	199.0	Driving diagonally across the target (SE to NW)	
99/09/13 08:26:27.00	391948.9	4946817.9	2208.8	5.2	116.8	Heading to the start of imagenex line 99-13	
99/09/13 08:38:44.00	391972.3	4946807.5	2189.3	24.1	10.3	Imagenex settings: speed = faster, range = 50 m	
99/09/13 08:39:47.00	391969.5	4946805.1	2189.3	24.1	21.9	Start of imagenex line 99-13	
99/09/13 09:16:26.00	392104.8	4947186.6	2188.1	26.9	312.8	Haven't had a Jason fix in a while	
99/09/13 09:17:58.00	392118.4	4947232.9	2187.1	28.4	23.9	Jason fix	
99/09/13 09:36:46.00	392209.5	4947466.4	2194.9	22.8	343.8	EOL 99-13	
99/09/13 09:39:13.00	392201.2	4947469.0	2212.5	5.7	322.0	Started video up again at 0938, going back down to bottom to locate USGS tower #4	
99/09/13 09:39:31.00	392193.1	4947469.7	2212.6	5.6	321.1	Back on bottom	
99/09/13 09:51:26.00	392134.4	4947530.4	2212.5	5.3	225.2	At target for tower 4	
99/09/13 09:52:31.00	392136.1	4947522.6	2214.1	4.2	143.9	VID_GRAB	Tripod 4 FOUND!
99/09/13 09:52:44.00	392134.9	4947516.3	2216.2	2.1	152.2	VID_GRAB	USGS Tripod 4
99/09/13 09:52:50.00	392134.9	4947516.3	2217.2	1.4	149.1	VID_GRAB	
99/09/13 09:53:18.00	392145.6	4947514.1	2217.4	1.2	164.4	VID_GRAB	crab at base of tripod
99/09/13 09:53:31.00	392145.6	4947514.1	2217.4	1.2	164.4	VID_GRAB	top of tripod
99/09/13 09:54:54.00	392146.9	4947512.1	2218.3	4.3	191.4	VID_GRAB	inside base of leg
99/09/13 09:55:20.00	392147.2	4947512.5	2218.3	30.0	221.5	VID_GRAB	
99/09/13 09:58:37.00	392138.3	4947508.1	2218.3	30.0	221.0	VID_GRAB	Pressure sensor in place, starting measurement
99/09/13 10:08:17.00	392148.1	4947512.8	2218.3	30.0	221.1	VID_GRAB	
99/09/13 10:08:31.00	392148.1	4947512.8	2218.3	30.0	221.1	VID_GRAB	Looking up towards top of tripod
99/09/13 10:09:50.00	392147.3	4947512.0	2218.3	30.0	220.9	End of measurement	
99/09/13 10:12:36.00	392144.6	4947511.6	2218.3	30.0	221.1	Pressure sensor in place on Jason	

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99/09/13 10:13:36.00	392147.3	4947512.9	2217.7	0.9	164.2	VID_GRAB	spider crab next to tripod
99/09/13 10:15:04.00	392146.2	4947512.7	2215.5	3.1	100.1	VID_GRAB	benthos package on tripod
99/09/13 10:15:13.00	392146.2	4947512.7	2215.6	2.6	101.3	VID_GRAB	very top of tripod
99/09/13 10:15:41.00	392146.4	4947510.7	2215.6	2.5	100.7	VID_GRAB	top again
99/09/13 10:16:03.00	392146.7	4947511.1	2215.0	3.7	100.3	VID_GRAB	
99/09/13 10:16:11.00	392146.7	4947511.1	2214.6	4.0	84.5	VID_GRAB	whole tripod
99/09/13 10:16:38.00	392134.4	4947508.7	2212.8	5.6	90.6	Heading to SIO 7	
99/09/13 10:35:50.00	393752.3	4947387.4	2213.1	4.2	174.7	Lost ROV fixes	
99/09/13 10:40:17.00	394145.5	4951491.9	2212.7	3.7	272.7	Nav is still out	
99/09/13 10:42:24.00	392140.1	4947359.5	2206.9	9.9	323.6	Nav is back!	
99/09/13 10:42:57.00	392141.6	4947353.9	2206.1	10.3	249.6	Pressure transducer fell off the basket	
99/09/13 10:50:20.00	392144.0	4947275.2	2203.2	13.0	337.8	paroscientific back aboard	
99/09/13 10:51:59.00	392139.4	4947254.0	2204.3	11.2	314.5	cable for parosci is wrapped around the knife	
99/09/13 10:52:02.00	392139.4	4947254.0	2204.1	11.5	313.6	VID_GRAB	
99/09/13 10:52:51.00	392143.4	4947254.8	2205.6	9.8	322.5	Parosci. not logging	
99/09/13 10:53:30.00	392145.4	4947249.6	2212.2	4.8	180.1	It was turned off	
99/09/13 11:00:26.00	392163.0	4947195.7	2212.3	3.4	143.2	parosci back on and logging	
99/09/13 11:00:26.00	392163.0	4947195.7	2212.3	3.4	143.2	VID_GRAB	
99/09/13 11:00:45.00	392161.4	4947191.1	2212.3	3.4	143.3	parosci dangling from ??	
99/09/13 11:59:12.00	392157.8	4947172.2	2213.6	3.6	72.8	Searching for SIO-7	
99/09/13 12:30:16.00	392204.9	4947219.5	2213.5	2.6	349.5	Nav hasn't been too good -- too close to baseline.	
99/09/13 12:30:24.00	392204.9	4947219.5	2213.6	2.5	351.4	Still looking for SIO-7	
99/09/13 13:25:35.00	392140.2	4947215.3	2213.4	1.9	181.6	Tape Deck 3 jammed with Tape 039 inside.	
99/09/13 13:25:48.00	392140.2	4947215.3	2213.2	2.5	176.8	Changed other tapes at 1318	
99/09/13 13:28:42.00	392135.5	4947227.8	2213.4	1.8	313.0	That's 039Archive - tape jammed upon eject	
99/09/13 13:46:56.00	392126.1	4947168.9	2212.8	2.3	275.6	Tape deck 3 repaired, tape 039A removed successfully	
99/09/13 13:47:29.00	392122.8	4947169.8	2213.1	1.5	339.3	Stopped decks 1,2,&4 when 3 was fixed, started all 4 new tapes at 1344	
99/09/13 13:49:53.00	392142.7	4947165.7	2213.4	2.1	168.4	Target acquired, SIO-7	
99/09/13 13:50:28.00	392144.2	4947161.8	2213.3	1.9	162.3	VID_GRAB	
99/09/13 13:50:36.00	392145.1	4947159.2	2213.3	1.9	163.8	VID_GRAB	SIO-7
99/09/13 13:50:59.00	392145.4	4947156.3	2213.3	2.0	191.0	Dropped Target 27 (Jason) at SIO-7	
99/09/13 13:52:13.00	392150.3	4947156.5	2215.2	30.0	235.5	VID_GRAB	
99/09/13 13:52:23.00	392149.4	4947155.3	2215.2	30.0	235.4	VID_GRAB	
99/09/13 13:56:09.00	392147.2	4947153.8	2215.2	2.1	238.3	VID_GRAB	

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99/09/13 13:56:44.00	392149.5	4947155.4	2215.2	30.0	238.3	VID_GRAB	Taking pressure reading at SIO-7, Instrument placed on "S".
99/09/13 13:59:21.00	392147.8	4947154.4	2215.1	30.0	238.0	SIO-7 X=392149 Y= 4947155 D=2215m ~46m bearing 209 from original target	
99/09/13 14:01:09.00	392148.1	4947153.7	2215.1	30.0	237.9	VID_GRAB	
99/09/13 14:21:38.00	392147.5	4947154.7	2215.0	30.0	241.1	Starting readings now	
99/09/13 14:21:41.00	392147.5	4947154.7	2215.0	30.0	241.1	VID_GRAB	
99/09/13 14:21:45.00	392147.5	4947154.7	2215.0	30.0	241.1	VID_GRAB	
99/09/13 14:22:15.00	392148.6	4947155.2	2215.0	30.0	241.2	Taking another pressure measurement at SIO-7, the other one wasn't quite flush	
99/09/13 14:22:19.00	392148.6	4947155.2	2215.0	30.0	241.1	VID_GRAB	
99/09/13 14:22:24.00	392148.6	4947155.2	2215.0	30.0	241.1	VID_GRAB	
99/09/13 14:22:53.00	392149.2	4947155.4	2215.0	30.0	241.1	VID_GRAB	Second measurement again taken on the "S"
99/09/13 14:29:03.00	392146.5	4947153.2	2215.0	30.0	240.7	VID_GRAB	
99/09/13 14:29:14.00	392147.1	4947154.0	2215.0	30.0	240.7	VID_GRAB	Second pressure measurement
99/09/13 14:31:46.00	392147.2	4947153.4	2215.0	30.0	240.2	Stopped readings	
99/09/13 14:41:20.00	392148.3	4947155.0	2214.9	30.0	240.5	Will be doing a short video survey of this setting, then off to IMA99-14	
99/09/13 14:42:56.00	392148.8	4947154.9	2214.1	0.7	239.7	VID_GRAB	
99/09/13 14:42:59.00	392148.8	4947154.9	2214.0	0.9	239.9	VID_GRAB	
99/09/13 14:43:39.00	392149.4	4947156.2	2214.2	0.8	210.3	VID_GRAB	
99/09/13 14:43:45.00	392149.4	4947156.2	2214.1	0.8	210.8	VID_GRAB	
99/09/13 14:46:02.00	392148.5	4947153.0	2214.2	1.0	301.3	VID_GRAB	Scripps benchmark
99/09/13 14:46:28.00	392149.6	4947153.0	2213.9	1.5	299.0	VID_GRAB	SIO 7
99/09/13 14:47:50.00	392150.3	4947153.5	2214.0	0.8	278.2	VID_GRAB	SIO-7 gravimeter
99/09/13 14:49:20.00	392149.6	4947152.2	2213.9	0.9	277.6	position of SIO-7 x=392149 y=4947155	
99/09/13 14:51:43.00	392155.2	4947162.9	2213.9	1.1	84.3	VID_GRAB	Preparing to head to SOL 99-14
99/09/13 14:53:20.00	392165.5	4947152.6	2213.4	1.5	83.3	VID_GRAB	heading east. We will cross the cleft
99/09/13 14:53:53.00	392160.9	4947147.7	2213.2	1.6	83.5	there are 2 troughs here. western is not as deep as the eastern	
99/09/13 14:56:15.00	392193.8	4947153.7	2213.2	1.3	84.3	VID_GRAB	lobates

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99/09/13 14:56:50.00	392194.0	4947151.4	2213.2	1.6	84.2	VID_GRAB	The minor cleft
99/09/13 14:57:06.00	392200.0	4947151.6	2213.2	1.5	84.4	VID_GRAB	
99/09/13 14:59:08.00	392210.6	4947151.2	2214.5	1.2	24.4	VID_GRAB	sheet lavas
99/09/13 14:59:27.00	392213.1	4947150.1	2214.5	1.5	77.1	VID_GRAB	sheets to the right, jumbled to the left
99/09/13 15:00:49.00	392217.4	4947148.8	2214.3	2.8	83.9	VID_GRAB	channelized lava flow parallel to main cleft
99/09/13 15:01:09.00	392221.9	4947148.9	2214.3	2.9	80.1	VID_GRAB	
99/09/13 15:01:18.00	392215.9	4947142.8	2213.5	3.6	83.2	VID_GRAB	flowing up the rise
99/09/13 15:02:25.00	392230.5	4947145.3	2212.1	2.4	75.8	VID_GRAB	
99/09/13 15:04:09.00	392258.2	4947146.5	2213.1	2.8	65.8	VID_GRAB	drainout with cleft on other side
99/09/13 15:06:20.00	392279.7	4947147.9	2219.6	30.0	10.7	VID_GRAB	western edge of cleft, about 25 meters wide cleft
99/09/13 15:06:35.00	392279.7	4947147.9	2219.9	0.8	56.3	VID_GRAB	
99/09/13 15:07:45.00	392289.3	4947149.3	2219.3	3.7	91.7	VID_GRAB	
99/09/13 15:08:19.00	392291.3	4947146.4	2217.5	3.1	91.0	VID_GRAB	
99/09/13 15:08:54.00	392294.0	4947142.8	2216.6	1.9	90.6	VID_GRAB	
99/09/13 15:09:29.00	392299.3	4947143.0	2214.4	2.7	76.3	VID_GRAB	
99/09/13 15:11:20.00	392320.1	4947150.5	2214.8	30.0	72.8	VID_GRAB	
99/09/13 15:11:36.00	392323.8	4947151.1	2214.8	1.1	73.1	VID_GRAB	Beautiful anemone
99/09/13 15:11:54.00	392322.8	4947150.3	2214.9	29.4	72.5	VID_GRAB	
99/09/13 15:12:13.00	392322.8	4947150.3	2214.8	0.6	51.8	VID_GRAB	gorgeous frame grab
99/09/13 15:13:54.00	392334.3	4947157.6	2212.4	2.8	34.6	VID_GRAB	
99/09/13 15:15:51.00	392342.7	4947162.1	2211.6	1.9	37.3	VID_GRAB	rattail
99/09/13 15:20:24.00	392329.6	4947159.7	2190.5	24.3	183.2	SOL 99-14	
99/09/13 15:21:16.00	392324.7	4947154.9	2190.5	24.1	185.9	Stop the video	
99/09/13 15:58:14.00	392202.9	4946779.7	2185.7	25.1	163.3	EOL 99-14, SOIL 99-15	
99/09/13 15:58:29.00	392202.9	4946779.7	2185.7	25.1	140.3	VID_GRAB	
99/09/13 15:59:45.00	392202.9	4946779.7	2185.7	25.1	106.7	SOL99-15	
99/09/13 16:13:28.00	392305.5	4946739.7	2185.7	25.7	108.0	testing, seems I've lost a few lines of the log	
99/09/13 16:17:41.00	392360.3	4946726.6	2185.7	25.0	103.0	test help me	
99/09/13 16:22:08.00	-100000.0	-100000.0	2185.5	25.4	97.8	TESTING	
99/09/13 16:22:23.00	392401.1	4946703.5	2185.5	25.4	97.4	TESTING2	
99/09/13 16:26:32.00	392439.8	4946699.1	2185.7	25.4	104.4	new log file because d:\dsgdata\19990913_1600.evt wasn't updating	
99/09/13 16:27:07.00	392439.8	4946699.1	2185.7	25.4	103.5	New log file directory is d:\19990913_1622.evt (so didn't make it in same place as previous file)	

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99/09/13 16:27:38.00	392449.5	4946691.9	2185.7	25.4	103.2	So, missed SOL 99-15, and now it's the EOL 99-15. Heading for benchmark	
99/09/13 16:48:40.00	392413.5	4946540.6	2189.5	21.1	202.9	going down to the bottom now	
99/09/13 16:51:25.00	392402.8	4946528.5	2210.6	1.4	224.0	VID_GRAB	benchmark 4 in the distance. We're here to do another pressure reading.
99/09/13 17:03:06.00	392393.5	4946521.8	2211.8	2.1	198.3	Pressure sensor on the benchmark	
99/09/13 17:03:54.00	392394.8	4946523.7	2211.8	28.7	198.4	VID_GRAB	Pressure sensor on benchmark 4
99/09/13 17:13:32.00	392394.6	4946522.4	2211.9	30.0	195.7	changing the video	
99/09/13 17:16:52.00	392390.5	4946517.0	2211.9	30.0	195.3	Pressure sensor finished at 17:14	
99/09/13 17:20:41.00	392394.7	4946522.1	2211.9	30.0	194.5	Changed nav quality to OK, noticed it said unknown	
99/09/13 17:21:34.00	392395.1	4946522.9	2211.5	1.5	183.3	VID_GRAB	
99/09/13 17:22:10.00	392395.7	4946523.2	2210.0	2.5	171.1	VID_GRAB	
99/09/13 17:24:34.00	392391.4	4946491.7	2180.2	30.0	152.0	Heading up. We will come up and check the weather on the way - may go back down, may not	
99/09/13 17:24:40.00	392391.4	4946491.7	2178.1	30.0	151.9	video off	
99/09/13 17:33:18.00	392399.0	4946537.5	1994.7	30.0	122.3	we're coming up at 17:25	
99/09/13 17:54:02.00	392352.7	4946721.7	1590.6	30.0	120.0	All stop	
99/09/13 17:55:53.00	392348.8	4946735.9	1590.8	30.0	116.8	Changing heading to see if we can get e-mail	
99/09/13 18:06:30.00	392345.2	4946769.9	1590.7	30.0	104.7	Got the e-mail.	
99/09/13 18:20:52.00	392340.4	4946795.5	1771.0	30.0	39.0	Heading back down	
99/09/13 18:34:26.00	392219.5	4946786.4	2060.5	30.0	62.1	Hit the plume at about 2000 meters	
99/09/13 18:45:47.00	392057.4	4946732.5	2208.7	2.8	191.2	On the bottom. starting the video	
99/09/13 18:45:54.00	392058.0	4946730.5	2208.7	3.2	192.5	VID_GRAB	old chimneys
99/09/13 18:46:21.00	392056.5	4946727.6	2207.2	4.5	187.0	VID_GRAB	old chimneys
99/09/13 18:46:43.00	392055.0	4946725.4	2204.7	7.0	217.1	VID_GRAB	
99/09/13 18:46:59.00	392053.7	4946726.3	2204.8	6.9	273.0	Driving to benchmark 4	
99/09/13 18:47:49.00	392033.1	4946721.7	2204.7	7.5	252.2	CORRECTION: HEADING TO BM9	
99/09/13 19:01:31.00	391911.6	4946689.4	2210.8	2.8	254.9	At benchmark 9	
99/09/13 19:01:58.00	391911.6	4946689.4	2212.9	1.6	247.9	VID_GRAB	benchmark 9
99/09/13 19:02:15.00	391911.6	4946689.4	2213.2	1.2	247.6	VID_GRAB	benchmark 9 with slip ring in foreground

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99/09/13 19:11:41.00	391887.1	4946679.7	2214.2	30.0	10.2	Pressure sensor in place to do another measurement at benchmark 9	
99/09/13 19:23:58.00	391891.2	4946682.8	2212.7	1.5	357.5	End of measurement	
99/09/13 19:24:02.00	391891.2	4946682.8	2212.3	1.9	351.1	Heading due south	
99/09/13 19:46:44.00	391879.6	4946563.2	2190.4	23.5	238.5	SOL imagenex 99-10	
99/09/13 19:55:00.00	391869.7	4946483.3	2188.3	25.3	205.4	stopped video at 1954	
99/09/13 21:15:49.00	391548.0	4945495.0	2185.4	23.7	194.8	EOL 99-10, SOL 99-9	
99/09/13 21:54:46.00	391205.8	4945539.0	2187.8	25.4	283.1	EOL 99-9	
99/09/13 21:55:06.00	391207.9	4945539.6	2187.7	25.4	230.9	Going down to look for SIO-2	
99/09/13 21:57:01.00	391212.4	4945536.1	2209.5	4.1	239.3	Start video again at 2156	
99/09/13 22:08:44.00	391202.9	4945540.2	2210.7	2.6	170.1	VID_GRAB	jellyfish
99/09/13 22:22:18.00	391201.8	4945504.2	2209.6	2.7	213.7	Heading south in search of SIO-2	
99/09/13 22:26:20.00	391228.4	4945510.6	2209.6	2.9	259.2	Going west	
99/09/13 22:34:18.00	391182.0	4945520.5	2209.6	2.7	227.5	VID_GRAB	Skate
99/09/13 22:39:50.00	391164.6	4945514.2	2209.5	3.2	198.8	Changed video tapes at 2235	
99/09/13 22:40:05.00	391167.8	4945515.0	2209.6	3.1	149.3	Still looking for SIO-2	
99/09/13 22:57:15.00	391162.6	4945502.1	2209.7	2.5	125.9	VID_GRAB	White Skate
99/09/13 23:28:34.00	391187.3	4945528.9	2209.3	2.7	265.8	Still looking for SIO-2	
99/09/13 23:49:44.00	391177.8	4945566.0	2212.7	1.2	120.8	VID_GRAB	paint can
99/09/13 23:49:47.00	391177.8	4945566.0	2212.7	1.2	120.8	VID_GRAB	
99/09/13 23:50:01.00	391177.6	4945565.3	2212.8	1.2	120.5	VID_GRAB	starfish near opening
99/09/14 00:06:54.00	391197.0	4945570.0	2211.5	2.5	256.7	VID_GRAB	ray
99/09/14 00:12:00.00	391204.7	4945586.0	2212.7	1.0	102.9	VID_GRAB	ray
99/09/14 00:12:30.00	391208.1	4945584.1	2212.2	1.6	109.8	still going to east	
99/09/14 00:17:35.00	391222.2	4945567.0	2212.0	1.9	175.6	VID_GRAB	
99/09/14 00:19:57.00	391221.6	4945588.6	2212.2	1.8	2.7	heading to south	
99/09/14 00:48:04.00	391247.0	4945521.3	2211.1	1.4	255.0	STILL looking for SIO-2	
99/09/14 00:48:18.00	391237.2	4945519.0	2211.0	1.1	254.2	Target 29 dropped accidentally (nothing there)	
99/09/14 01:01:03.00	391258.2	4945474.4	2211.2	1.1	261.2	Changed tapes 0050	
99/09/14 01:09:27.00	391249.4	4945444.7	2211.1	0.8	274.0	Oh Man...giving up the search! We feel we've covered this area thoroughly..with no luck...3 hrs.	
99/09/14 01:14:08.00	391245.5	4945459.1	2210.6	1.0	56.8	up to 25m for IMAGENEX survey	
99/09/14 01:20:07.00	391281.7	4945463.1	2186.3	24.1	79.4	Making a short transit E, parallel and south of 99-9, to 99-16, where we'll head north	
99/09/14 01:27:41.00	391348.0	4945473.5	2185.7	24.2	74.9	Plan has changed, we will be doing Imagenex lines only, not going back north	

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99/09/14 01:28:44.00	391351.8	4945472.7	2185.7	24.1	74.9	We will be starting at the southern end of Line 14 (1998), starting south on Line 23.	
99/09/14 01:52:12.00	391546.5	4945487.6	2185.1	23.5	212.5	We have reached line 14, turning to south	
99/09/14 01:52:56.00	391547.3	4945480.8	2185.0	23.6	211.9		Start IMA Line
99/09/14 01:54:52.00	391550.4	4945464.6	2185.1	23.2	211.9	Starting ~10m east of line, working to get back on.	
99/09/14 01:56:21.00	391542.7	4945454.9	2185.0	23.4	210.9	Switching transponder nets	
99/09/14 02:50:08.00	391289.8	4944813.7	2183.6	24.2	182.6	Still on Line 23	
99/09/14 02:53:58.00	391272.9	4944753.4	2183.5	24.7	186.8	So, we're still on line 23 heading to the southwest	
99/09/14 02:54:30.00	391269.4	4944745.9	2183.6	24.7	191.2	last file was d:\19990914_0200.evt	
99/09/14 04:20:18.00	390835.6	4943555.7	2183.6	25.6	199.2	EOL 23 will go east to line 24	
99/09/14 04:35:29.00	390890.6	4943534.1	2183.7	24.9	20.8	SOL 24	
99/09/14 04:37:05.00	390893.3	4943533.6	2183.7	24.5	19.3		
99/09/14 04:37:06.00	390893.3	4943533.6	2183.7	24.5	19.3		
99/09/14 06:20:39.00	391395.2	4944909.4	2183.6	24.6	2.6	still on line 24	
99/09/14 07:01:30.00	391600.1	4945466.7	2182.6	25.4	3.6	EOL 24	
99/09/14 07:01:40.00	391601.1	4945467.6	2182.6	25.6	3.5	Heading to east to do line 25	
99/09/14 07:18:19.00	391647.3	4945440.7	2186.5	24.9	218.3	SOL 25	
99/09/14 09:46:44.00	390943.5	4943511.6	2186.6	26.1	196.3	EOL 25	
99/09/14 10:06:02.00	390989.4	4943494.4	2201.5	24.5	20.0	SOL 26	
99/09/14 10:53:23.00	391211.5	4944072.7	2206.3	23.0	29.3	Lots of smoke in the water here	
99/09/14 12:54:53.00	391751.9	4945405.7	2191.0	26.7	165.7	1240 EOL26	
99/09/14 12:55:38.00	391752.3	4945407.4	2191.0	26.9	163.6	Turning to line 27	
99/09/14 12:59:13.00	391760.7	4945384.3	2191.0	18.9	182.4	SOL27, heading SW	
99/09/14 15:30:37.00	391050.9	4943471.7	2184.0	24.3	176.5	EOL 27, heading east	
99/09/14 15:44:57.00	391109.4	4943489.2	2182.3	26.6	10.4	SOL 28 - heading northeast	
99/09/14 17:20:03.00	391386.8	4944210.1	2183.9	25.2	7.7	Had a DP dropout, but we are now back where we started before it happened.	
99/09/14 18:38:43.00	391746.0	4945208.6	2183.9	25.7	17.2	Line 28 extends north and becomes line 17. They are basically all one line. (28 is the southern portion, 17 is the northern portion)	
99/09/14 18:41:53.00	391772.2	4945240.5	2183.8	25.7	16.4	VID_GRAB	This is for John. Don't ask me why?
99/09/14 18:50:37.00	391826.0	4945380.9	2184.0	25.6	17.7	EOL 28, SOL 17	
99/09/14 20:07:17.00	392164.4	4946489.4	2184.9	26.8	7.5	EOL 17, SOL 18 (line 18 is the northern continuation of line 29)	

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99/09/14 20:27:26.00	392215.9	4946397.5	2186.0	25.5	197.6	Wasn't the start yet...now it's the SOL 18!	
99/09/14 21:30:58.00	391942.4	4945569.0	2185.4	26.7	189.0	EOL 18 at ~2125, SOL 29	
99/09/15 00:10:54.00	391162.8	4943435.3	2184.7	27.2	190.9	EOL 29	
99/09/15 00:12:27.00	391159.4	4943437.5	2184.8	27.0	346.7	Now heading to northeast 710m to the site to deploy the hobo.	
99/09/15 00:14:14.00	391172.8	4943424.8	2179.0	30.0	166.1	Mistake on the last line: the direction of heading is northwest, not northeast.	
99/09/15 00:21:35.00	391173.7	4943435.0	2162.4	30.0	193.6	Transiting over to the smokers to deploy hobo	
99/09/15 00:25:20.00	391172.6	4943465.6	2185.3	25.5	192.4	Will transit fast, in trailback mode until we are 100m away from the smoker (target 30)	
99/09/15 01:05:54.00	391202.1	4944080.4	2212.1	20.1	358.1	Beginning to descend into the Cleft	
99/09/15 01:08:57.00	389208.2	4944701.8	2228.2	0.9	336.0	Video tapes started at 0107	
99/09/15 01:10:01.00	388162.9	4957813.5	2224.2	3.1	337.3	Jason nav is sketchy here down in the Cleft	
99/09/15 01:20:05.00	391179.0	4944175.9	2225.0	2.8	100.6	VID_GRAB	Extinct or barely smoking chimneys
99/09/15 01:20:10.00	391179.0	4944175.9	2224.9	2.7	99.8	VID_GRAB	
99/09/15 01:20:15.00	391179.0	4944175.9	2224.9	2.6	99.3	VID_GRAB	
99/09/15 01:20:24.00	391179.0	4944175.9	2224.9	3.4	98.0	VID_GRAB	
99/09/15 01:20:49.00	391179.0	4944175.9	2225.0	3.0	99.3	VID_GRAB	
99/09/15 01:21:00.00	391179.0	4944175.9	2224.8	3.1	95.2	VID_GRAB	
99/09/15 01:21:09.00	391179.0	4944175.9	2224.9	2.9	99.5	VID_GRAB	Some smoke
99/09/15 01:21:11.00	391179.0	4944175.9	2224.9	2.9	99.6	VID_GRAB	
99/09/15 01:21:19.00	391179.0	4944175.9	2224.9	2.9	99.5	VID_GRAB	beehive
99/09/15 01:21:25.00	391179.0	4944175.9	2225.0	2.9	99.4	VID_GRAB	
99/09/15 01:28:30.00	391179.0	4944175.9	2224.8	2.6	93.6	VID_GRAB	
99/09/15 01:28:41.00	391179.0	4944175.9	2224.8	2.5	33.2	VID_GRAB	black sediment
99/09/15 01:37:46.00	391179.0	4944175.9	2224.1	10.5	180.5	VID_GRAB	
99/09/15 01:37:49.00	391179.0	4944175.9	2224.1	10.9	180.0	VID_GRAB	
99/09/15 01:40:33.00	391179.0	4944175.9	2226.1	7.6	9.0	VID_GRAB	
99/09/15 01:40:35.00	391179.0	4944175.9	2226.0	7.8	11.4	VID_GRAB	
99/09/15 01:41:06.00	391179.0	4944175.9	2227.1	7.2	10.2	VID_GRAB	
99/09/15 01:41:08.00	391179.0	4944175.9	2227.6	6.9	10.5	VID_GRAB	
99/09/15 01:41:16.00	391179.0	4944175.9	2228.0	6.4	13.1	VID_GRAB	
99/09/15 01:41:21.00	391179.0	4944175.9	2227.6	6.2	12.1	VID_GRAB	
99/09/15 01:41:32.00	391179.0	4944175.9	2227.6	6.3	11.4	VID_GRAB	Chimney cluster, mostly extinct
99/09/15 01:41:55.00	391179.0	4944175.9	2227.8	4.7	14.8	VID_GRAB	
99/09/15 01:41:58.00	391179.0	4944175.9	2227.8	4.2	16.2	VID_GRAB	
99/09/15 01:42:01.00	391179.0	4944175.9	2227.7	3.9	15.8	VID_GRAB	
99/09/15 01:42:09.00	391179.0	4944175.9	2227.7	3.6	17.6	VID_GRAB	

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99/09/15 01:42:21.00	391179.0	4944175.9	2228.4	3.0	17.9	VID_GRAB	
99/09/15 01:42:31.00	391179.0	4944175.9	2228.3	2.8	17.6	VID_GRAB	
99/09/15 01:42:43.00	391179.0	4944175.9	2228.2	3.0	18.5	VID_GRAB	
99/09/15 01:42:52.00	391179.0	4944175.9	2227.9	3.3	18.5	VID_GRAB	
99/09/15 01:42:57.00	391179.0	4944175.9	2227.9	3.2	19.1	VID_GRAB	
99/09/15 01:43:08.00	391179.0	4944175.9	2227.8	3.4	20.0	VID_GRAB	Diffusing black/gray smoke
99/09/15 01:43:12.00	391179.0	4944175.9	2227.8	3.4	20.1	VID_GRAB	
99/09/15 01:43:30.00	391179.0	4944175.9	2227.9	2.8	18.0	VID_GRAB	
99/09/15 01:43:34.00	391179.0	4944175.9	2228.2	2.6	19.1	VID_GRAB	
99/09/15 01:43:35.00	391179.0	4944175.9	2228.1	2.7	19.2	VID_GRAB	
99/09/15 01:43:36.00	391179.0	4944175.9	2228.0	2.8	19.2	VID_GRAB	
99/09/15 01:43:38.00	391179.0	4944175.9	2227.9	2.9	18.8	VID_GRAB	
99/09/15 01:43:41.00	391179.0	4944175.9	2227.8	3.0	19.6	VID_GRAB	
99/09/15 01:43:44.00	391179.0	4944175.9	2227.8	3.0	20.2	VID_GRAB	
99/09/15 01:43:46.00	391179.0	4944175.9	2227.8	3.0	20.1	VID_GRAB	
99/09/15 01:43:50.00	391179.0	4944175.9	2227.9	2.9	19.3	VID_GRAB	
99/09/15 01:43:52.00	391179.0	4944175.9	2228.0	2.7	18.3	VID_GRAB	
99/09/15 01:43:53.00	391179.0	4944175.9	2228.2	2.6	18.1	VID_GRAB	
99/09/15 01:44:03.00	391179.0	4944175.9	2228.4	2.6	18.6	VID_GRAB	
99/09/15 01:44:05.00	391179.0	4944175.9	2228.4	2.5	19.1	VID_GRAB	
99/09/15 01:44:06.00	391179.0	4944175.9	2228.4	2.6	19.9	VID_GRAB	
99/09/15 01:44:08.00	391179.0	4944175.9	2228.2	2.7	19.2	VID_GRAB	
99/09/15 01:44:09.00	391179.0	4944175.9	2228.2	2.9	19.3	VID_GRAB	
99/09/15 01:44:10.00	391179.0	4944175.9	2228.2	2.7	19.8	VID_GRAB	
99/09/15 01:44:12.00	391179.0	4944175.9	2228.1	2.9	20.0	VID_GRAB	
99/09/15 01:44:14.00	391179.0	4944175.9	2228.1	2.9	19.9	VID_GRAB	
99/09/15 01:44:16.00	391179.0	4944175.9	2228.2	2.8	20.4	VID_GRAB	
99/09/15 01:44:40.00	391179.0	4944175.9	2228.3	2.5	19.5		
99/09/15 01:44:43.00	391179.0	4944175.9	2228.3	2.6	19.1	VID_GRAB	
99/09/15 01:44:48.00	391179.0	4944175.9	2228.3	2.5	18.9	VID_GRAB	
99/09/15 01:45:13.00	391179.0	4944175.9	2228.3	2.5	20.1	VID_GRAB	
99/09/15 01:45:16.00	391179.0	4944175.9	2228.3	2.6	19.6	VID_GRAB	
99/09/15 01:45:25.00	391179.0	4944175.9	2228.3	2.5	19.6	VID_GRAB	
99/09/15 01:46:33.00	391179.0	4944175.9	2228.3	2.4	19.1	VID_GRAB	
99/09/15 01:46:35.00	391179.0	4944175.9	2228.3	2.4	18.8	VID_GRAB	
99/09/15 01:48:22.00	391179.0	4944175.9	2228.3	2.4	18.0	VID_GRAB	Breaking top off beehive
99/09/15 01:54:04.00	391179.0	4944175.9	2228.4	2.2	20.1	VID_GRAB	
99/09/15 01:54:20.00	391179.0	4944175.9	2228.4	2.2	20.0	VID_GRAB	Grabbing HOBO
99/09/15 01:54:46.00	391179.0	4944175.9	2228.4	2.3	20.5	HOBO#137	
99/09/15 01:54:58.00	391179.0	4944175.9	2228.4	2.2	20.3	VID_GRAB	
99/09/15 01:55:05.00	391179.0	4944175.9	2228.4	2.3	20.1	VID_GRAB	
99/09/15 01:55:17.00	391179.0	4944175.9	2228.4	2.3	20.2	VID_GRAB	
99/09/15 01:55:29.00	391179.0	4944175.9	2228.4	2.3	20.2	VID_GRAB	Deploying HOBO137
99/09/15 01:57:09.00	391179.0	4944175.9	2228.4	2.2	20.3	VID_GRAB	
99/09/15 01:57:12.00	391179.0	4944175.9	2228.4	2.2	20.3	VID_GRAB	
99/09/15 01:57:16.00	391179.0	4944175.9	2228.4	2.3	20.4	VID_GRAB	

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99/09/15 01:57:21.00	391179.0	4944175.9	2228.4	2.2	20.4	VID_GRAB	
99/09/15 01:57:38.00	391179.0	4944175.9	2228.4	2.3	20.2	VID_GRAB	
99/09/15 01:57:47.00	391179.0	4944175.9	2228.4	2.3	20.4	VID_GRAB	
99/09/15 01:58:59.00	391179.0	4944175.9	2228.3	2.3	20.5	VID_GRAB	
99/09/15 02:01:15.00	391179.0	4944175.9	2228.4	2.2	21.3	VID_GRAB	Picking up HOBO137
99/09/15 02:02:20.00	391179.0	4944175.9	2228.4	2.2	22.3	VID_GRAB	
99/09/15 02:03:29.00	391179.0	4944175.9	2228.4	2.1	21.8	VID_GRAB	
99/09/15 02:03:47.00	391179.0	4944175.9	2228.4	2.1	21.7	VID_GRAB	
99/09/15 02:05:02.00	391179.0	4944175.9	2228.4	2.0	20.9		
99/09/15 02:19:42.00	389224.2	4944699.8	2229.8	1.4	283.0	VID_GRAB	Dropped the HOBO
99/09/15 02:31:35.00	389118.4	4944725.7	2227.5	2.8	21.1	VID_GRAB	
99/09/15 02:31:43.00	389118.4	4944725.7	2227.5	2.9	22.0	VID_GRAB	
99/09/15 02:31:52.00	389107.5	4944698.5	2227.4	3.0	21.0	VID_GRAB	Inserting HOBO137 again
99/09/15 02:31:55.00	389107.5	4944698.5	2227.4	3.0	20.7	VID_GRAB	
99/09/15 02:32:09.00	389107.5	4944698.5	2227.4	2.9	20.8	VID_GRAB	
99/09/15 02:32:13.00	389107.5	4944698.5	2227.4	2.9	20.9	VID_GRAB	
99/09/15 02:32:22.00	389107.5	4944698.5	2227.4	2.9	20.8	VID_GRAB	
99/09/15 02:32:36.00	389107.5	4944698.5	2227.4	2.8	20.8	VID_GRAB	
99/09/15 02:33:23.00	389107.5	4944698.5	2227.4	2.9	22.2	VID_GRAB	
99/09/15 02:33:51.00	389107.5	4944698.5	2227.5	2.8	21.4	Dropped the HOBO again	
99/09/15 02:34:00.00	389107.5	4944698.5	2227.5	2.8	21.5	VID_GRAB	
99/09/15 02:35:09.00	389155.7	4944795.9	2229.0	1.8	17.0	VID_GRAB	
99/09/15 02:37:32.00	389114.3	4944743.9	2229.0	2.0	22.5	VID_GRAB	
99/09/15 02:37:34.00	389114.3	4944743.9	2228.9	2.0	22.8	VID_GRAB	
99/09/15 02:52:17.00	389112.6	4944732.7	2230.0	0.8	347.2	VID_GRAB	trying to pick up the hobo
99/09/15 02:56:04.00	388223.1	4957790.4	2228.9	1.6	48.9	VID_GRAB	
99/09/15 02:56:08.00	388223.1	4957790.4	2228.9	1.7	49.1	VID_GRAB	
99/09/15 02:56:51.00	388108.7	4957751.1	2228.4	1.3	46.9	VID_GRAB	
99/09/15 02:57:06.00	388108.7	4957751.1	2228.3	1.6	49.0	VID_GRAB	beautiful chimney
99/09/15 02:58:18.00	389170.4	4944805.0	2227.9	1.6	48.8	VID_GRAB	chimney again
99/09/15 02:58:34.00	389170.4	4944805.0	2227.8	1.8	48.5	VID_GRAB	gorgeous grab of top of chimney
99/09/15 03:00:29.00	388217.7	4957885.1	2227.4	2.0	48.1	VID_GRAB	chimney and hobo - still trying to position hobo
99/09/15 03:01:54.00	389149.8	4944749.7	2227.1	2.3	43.4	FYI we are at Plume vent field	
99/09/15 03:07:08.00	386031.6	4933396.3	2227.1	2.2	43.3	VID_GRAB	hobo
99/09/15 03:07:28.00	386031.6	4933396.3	2227.1	2.2	43.3	switched videos - except #3 (archive) which is stuck again)	
99/09/15 03:09:56.00	384102.5	4946690.4	2227.1	2.2	44.7	VID_GRAB	repositioning the hobo

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99/09/15 03:12:15.00	389118.6	4944735.9	2227.2	2.1	45.5	VID_GRAB	the hobo hanging back of the chimney
99/09/15 03:12:48.00	389604.6	4961684.1	2227.1	2.4	44.4	VID_GRAB	
99/09/15 03:13:27.00	389090.6	4944556.8	2227.1	2.6	32.2	VID_GRAB	
99/09/15 03:14:23.00	388245.8	4957728.9	2227.0	2.5	30.9	VID_GRAB	hobo in smoker
99/09/15 03:15:15.00	389124.5	4944642.4	2227.0	2.6	30.6	VID_GRAB	hobo in smoker - good shot
99/09/15 03:17:03.00	389125.1	4944739.2	2226.9	2.8	20.3	VID_GRAB	smoke pouring out of chimney - hobo probe in the flow
99/09/15 03:27:22.00	391238.0	4944103.1	2177.9	30.0	153.0	Position of hobo at Plume field: x=291228 y=4944126	
99/09/15 03:27:53.00	391238.2	4944104.1	2167.1	30.0	152.3	Coming up (dive 266 coming to an end)	
99/09/15 06:54:04.00	390869.5	4945850.7	0.0	30.0	257.0	Questionable for how long the nav was poor for dive 266	
99/09/15 06:59:22.00	390869.5	4945850.7	0.5	1.7	215.6	DIVE 267: Jason at the surface	
99/09/15 07:01:07.00	390869.5	4945850.7	0.9	30.0	168.8	Medea at the surface	

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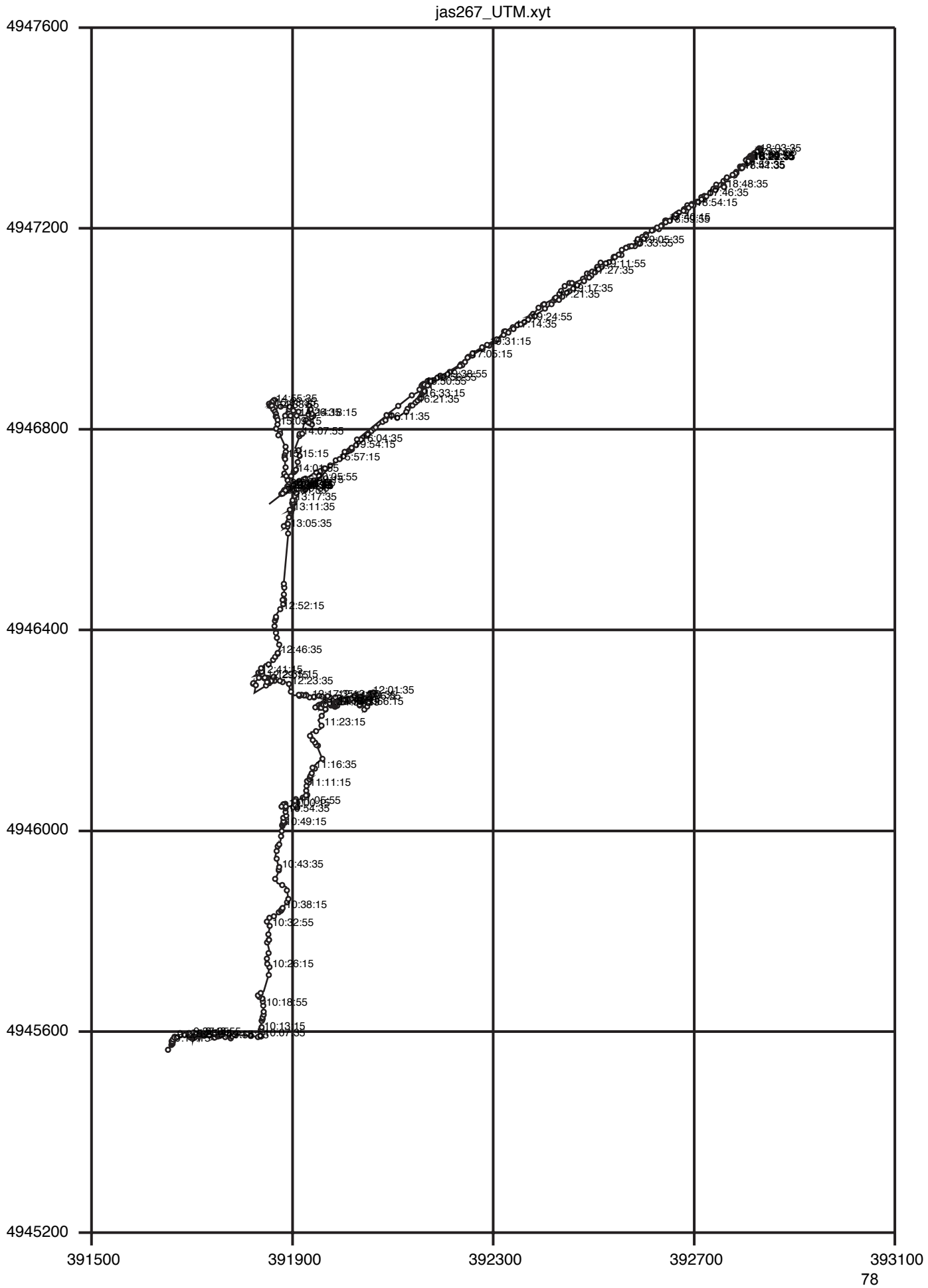
South Cleft


jas267_UTM.xyt
4947600
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10:49:15
10:43:35
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JASON DIVE 267

Date/Time	UTM X	UTM Y	Depth	Alt	Hdg	Comments	
JAS267							
99/09/15 07:01:42.00	390869.5	4945850.7	4.4	30.0	167.9	START LOWERING	
99/09/15 07:07:05.00	391803.9	4944759.7	100.5	30.0	131.2	100 m depth	
99/09/15 07:22:52.00	391679.4	4945656.1	500.9	30.0	75.8	500 m depth	
99/09/15 07:43:13.00	391639.9	4944496.7	1000.2	30.0	128.8	1000 m	
99/09/15 08:01:40.00	391619.5	4944759.0	1500.3	30.0	112.7	1500 m	
99/09/15 08:56:02.00	391663.2	4945464.8	2000.3	30.0	75.1	2000 m	
99/09/15 09:11:08.00	391655.9	4945570.3	2202.5	7.4	31.7	Starting video tapes	
99/09/15 09:11:32.00	391659.2	4945574.2	2209.6	2.4	29.1	On bottom	
99/09/15 09:12:06.00	391660.7	4945576.3	2209.9	2.3	358.9	Contact of jumbled flow with smooth sedimented area	
99/09/15 09:12:15.00	391661.2	4945576.2	2209.6	2.5	359.2	Looking at pillar-like feature	
99/09/15 09:12:57.00	391660.5	4945578.4	2209.2	1.7	0.8	Collapse area	
99/09/15 09:13:31.00	391660.0	4945580.4	2209.1	1.8	359.3	Collapse wall oriented 45deg with screen	
99/09/15 09:13:50.00	391660.0	4945580.6	2209.2	1.8	359.3	VID_GRAB	collapse wall
99/09/15 09:15:53.00	391660.8	4945579.9	2207.4	3.5	103.2	Heading east ~200 m	
99/09/15 09:17:11.00	391660.1	4945580.1	2207.5	3.4	92.8	Cleft ~50 m from where we are	
99/09/15 09:19:06.00	391662.1	4945584.9	2207.5	3.5	94.4	Lightly sedimented talus and drain out features	
99/09/15 09:19:20.00	391662.9	4945586.6	2207.0	3.5	92.6	VID_GRAB	drain out features
99/09/15 09:19:41.00	391665.5	4945589.9	2206.9	3.0	91.1	Lobate and pillow flows ahead, beyond edge of collapse	
99/09/15 09:21:27.00	391669.9	4945588.5	2206.6	2.7	88.7	Traversing over broad pillows and lobate flow	
99/09/15 09:21:50.00	391679.1	4945589.0	2206.3	3.0	89.7	Intermittently in collapse and lobate/pillow flow	
99/09/15 09:22:01.00	391679.1	4945589.0	2206.4	2.6	91.8	Scarp edge	
99/09/15 09:22:12.00	391685.5	4945593.7	2206.3	2.8	92.3	Scarp oriented 90deg with screen	
99/09/15 09:22:33.00	391692.4	4945589.5	2205.8	5.0	92.4	Seafloor dropped away, feature 30-40 m across	
99/09/15 09:23:39.00	391703.0	4945588.2	2205.2	14.4	93.1	In the main cleft	
99/09/15 09:24:37.00	391701.2	4945591.6	2217.2	2.0	95.9	Along bottom inside cleft	
99/09/15 09:25:02.00	391701.2	4945591.6	2217.2	3.5	97.5	Cracked sheet flow	
99/09/15 09:25:33.00	391710.6	4945594.3	2213.1	9.5	130.0	Going to turn around and look at the wall behind us	
99/09/15 09:26:18.00	391708.6	4945593.5	2214.8	8.1	277.9	VID_GRAB	Tubeworms along west wall of cleft
99/09/15 09:26:23.00	391708.6	4945593.5	2214.7	8.0	280.1	VID_GRAB	
99/09/15 09:26:38.00	391707.0	4945593.0	2213.7	8.5	273.9	VID_GRAB	Closer view of tubeworms
99/09/15 09:26:54.00	391703.9	4945589.3	2216.4	4.9	284.1	VID_GRAB	even closer view

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99/09/15 09:27:13.00	391702.2	4945583.6	2215.6	5.2	285.4	VID_GRAB	dead tube worms, no signs of life
99/09/15 09:27:57.00	391701.9	4945589.9	2218.3	4.0	285.2	VID_GRAB	
99/09/15 09:28:13.00	391701.9	4945589.9	2222.6	1.5	283.8	VID_GRAB	talus slope
99/09/15 09:28:19.00	391701.9	4945589.9	2223.4	1.2	281.0	Moving down to base of wall	
99/09/15 09:28:57.00	391701.9	4945589.9	2223.3	2.0	358.5	VID_GRAB	Alvin weight just below
99/09/15 09:29:45.00	391701.9	4945589.9	2218.0	6.7	268.1	At base of wall	
99/09/15 09:30:08.00	391705.5	4945588.2	2217.1	4.6	267.7	V-shape hole at base of wall, talus slope to west and pushed up lobate flow to east	
99/09/15 09:30:20.00	391705.5	4945588.2	2217.5	2.7	270.5	VID_GRAB	dead tube worms
99/09/15 09:31:01.00	391700.8	4945589.3	2215.5	4.7	254.2	Worms along the entire height of wall	
99/09/15 09:31:24.00	391701.6	4945589.2	2218.4	2.7	252.6	Large colony of dead tube worms among talus covered wall	
99/09/15 09:31:43.00	391701.6	4945589.2	2220.0	1.9	327.5	Clams	
99/09/15 09:33:04.00	391707.7	4945591.2	2219.5	4.2	7.4	VID_GRAB	Eastern wall, pushed up lobes
99/09/15 09:34:08.00	391707.7	4945591.2	2218.7	4.6	274.6	Climbing western wall	
99/09/15 09:34:34.00	391707.7	4945591.2	2216.9	4.3	274.9	Clams and dead tube worms	
99/09/15 09:35:31.00	391700.3	4945589.3	2215.9	3.4	275.5	VID_GRAB	Galitheid crab (sp?)
99/09/15 09:36:20.00	391701.0	4945590.1	2215.5	3.9	276.3	VID_GRAB	Another crab
99/09/15 09:37:30.00	391689.3	4945590.1	2213.3	3.1	279.0	We have seen a few of these crabs along the wall, may indicate some of the tubeworms are alive?	
99/09/15 09:37:53.00	391697.8	4945592.8	2213.3	2.5	280.6	VID_GRAB	Close up of tubeworms
99/09/15 09:39:02.00	391695.8	4945593.6	2208.7	5.3	281.6	VID_GRAB	Top of wall
99/09/15 09:39:10.00	391694.0	4945594.1	2208.6	5.3	281.5	VID_GRAB	
99/09/15 09:39:22.00	391694.0	4945594.1	2208.5	5.2	281.3	Scale worm	
99/09/15 09:40:20.00	391694.8	4945595.0	2208.0	5.4	51.0	VID_GRAB	top of western wall, lobate flow beyond to west
99/09/15 09:40:58.00	391698.7	4945598.1	2207.9	9.7	122.1	Up in water column, cannot see bottom	
99/09/15 09:42:11.00	391708.7	4945595.9	2221.6	1.2	98.9	Lobes/jumbled flow	
99/09/15 09:42:44.00	391708.7	4945595.9	2221.1	1.8	99.6	Bottom of cleft filled with transitional lobes to ropy flow	
99/09/15 09:43:00.00	391708.7	4945595.9	2220.2	2.3	97.8	Structural build up	
99/09/15 09:43:04.00	391708.7	4945595.9	2220.2	2.1	98.5	VID_GRAB	

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99/09/15 09:43:38.00	391720.0	4945593.8	2219.0	2.1	96.8	Flow becoming more ropy as we move east	
99/09/15 09:47:17.00	391728.5	4945593.0	2217.2	3.2	99.0	Central high	
99/09/15 09:47:43.00	391734.4	4945592.7	2216.9	3.2	99.5	Traversing over ropy/jumbled flow	
99/09/15 09:47:56.00	391737.7	4945592.0	2216.4	3.0	105.5	Talus	
99/09/15 09:49:06.00	391744.2	4945588.5	2215.4	4.0	97.8	VID_GRAB	Block slid out?
99/09/15 09:49:48.00	391745.7	4945588.7	2215.5	2.8	108.1	VID_GRAB	collapse; piece broke off and slid down
99/09/15 09:50:22.00	391748.9	4945591.2	2212.0	6.0	94.1	VID_GRAB	
99/09/15 09:50:34.00	391751.6	4945590.7	2209.5	8.4	94.1	VID_GRAB	central high
99/09/15 09:50:46.00	391751.6	4945590.7	2209.7	6.6	98.5	VID_GRAB	pillar
99/09/15 09:51:02.00	391751.4	4945592.3	2209.4	5.5	100.3	VID_GRAB	bathtub rings
99/09/15 09:51:23.00	391754.4	4945591.9	2208.7	6.2	99.0	VID_GRAB	bathtub rings along drain out wall
99/09/15 09:51:48.00	391755.0	4945591.4	2208.6	6.5	98.8	Remnant of old surface	
99/09/15 09:52:14.00	391755.3	4945591.9	2208.6	4.3	99.3	VID_GRAB	ceiling of drain out
99/09/15 09:52:25.00	391755.3	4945591.9	2208.6	5.2	98.8	VID_GRAB	Lobes on top of ceiling
99/09/15 09:53:36.00	391759.0	4945594.1	2208.0	2.6	98.4	VID_GRAB	
99/09/15 09:54:07.00	391762.5	4945593.5	2207.9	2.6	99.1	Walls and pillars with remnant lobate flow on top	
99/09/15 09:54:55.00	391771.5	4945587.7	2210.3	7.7	95.6	On eastern side of drain out area	
99/09/15 09:55:26.00	391776.4	4945589.4	2215.6	2.2	98.1	sheet flow	
99/09/15 09:55:52.00	391778.9	4945590.3	2217.4	2.0	171.8	lineated sheet flow	
99/09/15 09:56:33.00	391779.6	4945591.0	2216.7	3.2	167.2	VID_GRAB	looking back west at the wall we just came down (part of drain out area; in center of cleft)
99/09/15 09:57:06.00	391784.0	4945594.3	2216.7	4.0	75.7	East of central high: lineated sheet flow along floor	
99/09/15 09:57:27.00	391793.7	4945593.3	2216.6	3.0	68.9	Dropping down further	
99/09/15 09:57:33.00	391793.7	4945593.3	2217.6	2.1	77.3	spider crabs	
99/09/15 09:57:53.00	391793.7	4945593.3	2219.4	1.7	77.7	Bright patches ahead, yellow hydrothermal sediment, talus	
99/09/15 10:01:38.00	391744.6	4945575.6	2218.9	2.3	93.8	Talus covered floor	
99/09/15 10:02:16.00	391744.6	4945575.6	2219.5	0.8	108.4	VID_GRAB	
99/09/15 10:02:35.00	391744.6	4945575.6	2218.1	1.9	108.5	VID_GRAB	darker patch with brittle stars, hydrothermal spots

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99/09/15 10:03:20.00	391733.2	4945569.6	2216.8	3.0	106.8	VID_GRAB	climbed up a bit, shelf covered with micro-talus
99/09/15 10:03:42.00	391733.2	4945569.6	2214.8	4.2	108.4	Climbing eastern wall	
99/09/15 10:03:49.00	391733.2	4945569.6	2215.2	4.0	106.6	VID_GRAB	wall
99/09/15 10:04:02.00	391733.2	4945569.6	2214.1	4.8	106.9	VID_GRAB	top of wall
99/09/15 10:04:20.00	391733.2	4945569.6	2212.7	1.7	107.2	VID_GRAB	bathtub rings
99/09/15 10:04:31.00	391733.2	4945569.6	2212.2	2.4	106.8	Drain out features	
99/09/15 10:04:43.00	391733.2	4945569.6	2211.7	2.7	77.5	VID_GRAB	bathtub rings
99/09/15 10:04:52.00	391816.9	4945591.0	2211.2	2.8	78.9	VID_GRAB	close up
99/09/15 10:05:11.00	391818.1	4945591.8	2210.6	3.1	77.6	VID_GRAB	top of drain out, bathtub rings below
99/09/15 10:05:17.00	391818.1	4945591.8	2210.6	3.1	78.5	Highlights	
99/09/15 10:05:52.00	391817.3	4945591.3	2209.1	1.7	77.9	Lobate to pillow flow on top beyond wall	
99/09/15 10:06:03.00	391817.3	4945591.3	2209.2	1.5	82.7	Pillows with spider crabs	
99/09/15 10:07:01.00	391834.1	4945590.1	2209.3	1.5	79.6	VID_GRAB	pillows, east of eastern wall of cleft
99/09/15 10:08:13.00	391838.1	4945592.0	2209.2	1.5	81.4	Heading due north to waypoint #2	
99/09/15 10:14:06.00	391838.9	4945607.9	2208.0	2.6	1.0	pillows	
99/09/15 10:18:35.00	391842.9	4945640.2	2207.9	3.1	0.6	Traveling over pillows	
99/09/15 10:21:16.00	391839.8	4945665.9	2207.6	3.3	2.2	VID_GRAB	edge of eastern wall of cleft
99/09/15 10:21:25.00	391839.8	4945665.9	2207.6	3.1	360.0	No drain out features here	
99/09/15 10:22:24.00	391833.7	4945672.6	2209.8	8.9	48.2	VID_GRAB	drain out features, bathtub rings
99/09/15 10:22:39.00	391831.2	4945672.5	2207.9	11.3	60.9	Much sharper wall here than where we began	
99/09/15 10:25:42.00	391842.8	4945680.8	2207.4	3.3	3.8	ropy/lobe transition	
99/09/15 10:25:55.00	391853.1	4945712.8	2207.4	3.3	12.2	VID_GRAB	Edge of cleft, spider crab
99/09/15 10:26:14.00	391853.0	4945721.3	2207.4	5.3	10.2	Bathtub rings down along side of wall (looking down from top)	
99/09/15 10:27:31.00	391850.1	4945734.8	2214.9	5.7	27.6	8 meters down to bottom of cleft	
99/09/15 10:29:21.00	391853.7	4945763.9	2217.5	3.6	357.5	Lineated sheet flow, slope up to right (east)	
99/09/15 10:29:35.00	391853.7	4945763.9	2218.0	3.5	357.7	Following trend of lineated sheet flow	
99/09/15 10:29:50.00	391853.7	4945763.9	2217.4	4.1	0.8	Fairly well sedimented	
99/09/15 10:33:05.00	391854.9	4945805.3	2213.7	6.2	343.7	At site where wall extends into cleft perpendicular to trend of eastern wall	
99/09/15 10:33:42.00	391853.1	4945814.4	2211.4	5.5	344.5	VID_GRAB	remnant high from drain out

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99/09/15 10:35:23.00	391863.3	4945830.2	2212.3	8.0	41.7	Seafloor deeper here	
99/09/15 10:35:53.00	391873.1	4945838.3	2211.0	6.9	59.4	At eastern wall	
99/09/15 10:36:08.00	391878.4	4945842.8	2209.4	8.3	53.9	VID_GRAB	top of wall, drain out features
99/09/15 10:36:33.00	391877.2	4945841.0	2209.3	8.3	53.9	VID_GRAB	zoom in on wall
99/09/15 10:38:14.00	391878.1	4945844.1	2209.0	7.0	54.7	VID_GRAB	close up of eastern wall
99/09/15 10:38:22.00	391878.1	4945844.1	2209.0	5.7	41.6	VID_GRAB	top of wall
99/09/15 10:39:07.00	391889.4	4945857.9	2209.1	2.0	38.6	VID_GRAB	top of wall
99/09/15 10:42:17.00	391870.1	4945913.6	2212.1	3.3	24.4	sulfides	
99/09/15 10:43:03.00	391872.2	4945921.2	2214.3	3.4	41.7	In center of cleft	
99/09/15 10:43:28.00	391871.6	4945924.1	2214.5	4.4	56.5	VID_GRAB	
99/09/15 10:46:51.00	391876.2	4945981.0	2218.2	6.5	7.9	VID_GRAB	
99/09/15 10:46:56.00	391876.2	4945981.0	2218.1	5.7	10.3	VID_GRAB	remnant
99/09/15 10:47:03.00	391876.2	4945981.0	2218.5	4.4	5.3	VID_GRAB	
99/09/15 10:47:04.00	391876.2	4945981.0	2218.7	4.2	5.4	VID_GRAB	
99/09/15 10:47:15.00	391877.5	4945989.3	2218.3	3.8	5.2	VID_GRAB	remnant coated with sediment
99/09/15 10:47:50.00	391878.6	4945993.4	2217.8	2.9	5.0	VID_GRAB	
99/09/15 10:47:52.00	391878.6	4945993.4	2217.8	2.9	5.1	VID_GRAB	
99/09/15 10:48:01.00	391878.6	4945993.4	2217.8	3.1	4.1	VID_GRAB	
99/09/15 10:48:06.00	391878.6	4945993.4	2217.8	3.1	4.9	VID_GRAB	
99/09/15 10:48:17.00	391879.0	4945999.6	2217.8	2.8	4.9	VID_GRAB	
99/09/15 10:48:23.00	391879.0	4945999.6	2217.8	2.6	4.3	VID_GRAB	
99/09/15 10:48:24.00	391879.0	4945999.6	2217.8	2.5	4.6	VID_GRAB	
99/09/15 10:48:25.00	391879.0	4945999.6	2217.8	2.6	5.3	VID_GRAB	
99/09/15 10:48:26.00	391879.0	4945999.6	2217.8	3.0	6.4	VID_GRAB	
99/09/15 10:48:27.00	391878.4	4946001.2	2217.8	3.0	7.2	VID_GRAB	
99/09/15 10:48:28.00	391878.4	4946001.2	2217.8	4.0	8.2	VID_GRAB	
99/09/15 10:48:29.00	391878.4	4946001.2	2217.8	4.0	8.6	VID_GRAB	
99/09/15 10:48:30.00	391878.4	4946001.2	2217.8	4.2	9.1	VID_GRAB	
99/09/15 10:48:31.00	391878.4	4946001.2	2217.8	4.3	9.7	VID_GRAB	
99/09/15 10:48:32.00	391878.4	4946001.2	2217.8	4.6	10.1	VID_GRAB	
99/09/15 10:48:33.00	391878.4	4946001.2	2217.8	4.8	10.3	VID_GRAB	
99/09/15 10:48:34.00	391878.4	4946001.2	2217.8	4.9	10.5	VID_GRAB	
99/09/15 10:48:35.00	391878.4	4946001.2	2217.8	5.0	8.4	VID_GRAB	
99/09/15 10:48:36.00	391878.4	4946001.2	2217.7	5.0	6.3	VID_GRAB	
99/09/15 10:48:37.00	391878.4	4946001.2	2217.8	5.1	4.7	VID_GRAB	
99/09/15 10:48:38.00	391878.4	4946001.2	2218.0	5.1	3.8	VID_GRAB	
99/09/15 10:48:38.00	391878.4	4946001.2	2218.0	4.9	3.3	VID_GRAB	
99/09/15 10:48:39.00	391878.4	4946001.2	2218.2	4.6	3.1	VID_GRAB	
99/09/15 10:48:40.00	391878.4	4946001.2	2218.2	4.6	2.6	VID_GRAB	
99/09/15 10:48:41.00	391878.4	4946001.2	2218.5	4.3	0.6	VID_GRAB	
99/09/15 10:48:42.00	391878.4	4946001.2	2218.8	3.4	355.6	VID_GRAB	
99/09/15 10:48:44.00	391878.4	4946001.2	2219.2	3.2	356.2	VID_GRAB	
99/09/15 10:48:46.00	391878.4	4946001.2	2219.3	3.0	356.3	VID_GRAB	
99/09/15 10:48:47.00	391880.0	4946010.0	2219.4	3.0	353.9	VID_GRAB	
99/09/15 10:48:49.00	391880.0	4946010.0	2219.5	2.9	349.6	VID_GRAB	
99/09/15 10:48:52.00	391880.0	4946010.0	2220.0	2.3	350.3	VID_GRAB	
99/09/15 10:48:53.00	391880.0	4946010.0	2220.1	2.3	350.1	VID_GRAB	

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99/09/15 10:48:55.00	391880.0	4946010.0	2220.2	2.2	351.1	VID_GRAB	
99/09/15 10:48:57.00	391880.0	4946010.0	2220.2	2.4	356.0	VID_GRAB	
99/09/15 10:48:58.00	391880.0	4946010.0	2220.1	2.2	2.7	VID_GRAB	
99/09/15 10:49:00.00	391880.0	4946010.0	2220.0	1.9	6.8	VID_GRAB	
99/09/15 10:49:01.00	391880.0	4946010.0	2219.9	1.9	7.4	VID_GRAB	
99/09/15 10:49:02.00	391880.0	4946010.0	2219.9	2.0	7.8	VID_GRAB	
99/09/15 10:49:03.00	391880.0	4946010.0	2219.8	1.9	7.7	VID_GRAB	
99/09/15 10:49:07.00	391878.7	4946010.4	2219.6	2.0	6.8	VID_GRAB	
99/09/15 10:49:09.00	391878.7	4946010.4	2219.6	2.2	5.3	VID_GRAB	
99/09/15 10:49:13.00	391878.7	4946010.4	2219.6	2.6	5.9	VID_GRAB	
99/09/15 10:49:16.00	391878.7	4946010.4	2219.6	2.8	5.8	VID_GRAB	
99/09/15 10:49:17.00	391878.7	4946010.4	2219.5	2.6	6.2	VID_GRAB	
99/09/15 10:49:18.00	391878.7	4946010.4	2219.5	2.6	6.6	VID_GRAB	
99/09/15 10:49:20.00	391878.7	4946010.4	2219.4	2.5	6.4	VID_GRAB	
99/09/15 10:49:22.00	391878.7	4946010.4	2219.4	2.4	6.4	VID_GRAB	
99/09/15 10:49:24.00	391878.7	4946010.4	2219.4	2.4	6.6	VID_GRAB	
99/09/15 10:49:26.00	391878.7	4946010.4	2219.4	2.3	6.6	VID_GRAB	
99/09/15 10:49:29.00	391879.9	4946011.3	2219.4	2.3	6.7	VID_GRAB	
99/09/15 10:49:36.00	391879.9	4946011.3	2219.3	2.0	6.0	VID_GRAB	
99/09/15 10:49:38.00	391879.9	4946011.3	2219.4	1.9	5.3	VID_GRAB	
99/09/15 10:49:40.00	391879.9	4946011.3	2219.4	1.5	5.2	VID_GRAB	
99/09/15 10:49:41.00	391879.9	4946011.3	2219.4	1.2	5.2	VID_GRAB	
99/09/15 10:49:44.00	391879.9	4946011.3	2219.4	1.6	5.3	VID_GRAB	
99/09/15 10:49:48.00	391880.3	4946014.1	2219.3	1.5	5.9	VID_GRAB	
99/09/15 10:49:51.00	391880.3	4946014.1	2219.3	1.5	5.4	VID_GRAB	
99/09/15 10:49:54.00	391880.3	4946014.1	2219.4	1.4	4.6	VID_GRAB	
99/09/15 10:49:59.00	391880.3	4946014.1	2219.4	1.3	5.9	VID_GRAB	
99/09/15 10:50:00.00	391880.3	4946014.1	2219.3	1.4	5.9	VID_GRAB	
99/09/15 10:50:02.00	391880.3	4946014.1	2219.3	1.4	6.2	VID_GRAB	
99/09/15 10:50:04.00	391880.3	4946014.1	2219.2	1.5	6.2	VID_GRAB	
99/09/15 10:50:06.00	391880.3	4946014.1	2219.1	1.6	6.2	VID_GRAB	
99/09/15 10:50:09.00	391881.4	4946014.4	2219.0	1.7	6.3	VID_GRAB	
99/09/15 10:50:10.00	391881.4	4946014.4	2219.0	1.8	6.2	VID_GRAB	
99/09/15 10:50:13.00	391881.4	4946014.4	2219.0	1.8	6.2	VID_GRAB	
99/09/15 10:50:15.00	391881.4	4946014.4	2219.0	1.8	6.2	VID_GRAB	
99/09/15 10:50:17.00	391881.4	4946014.4	2219.0	1.9	6.1	VID_GRAB	
99/09/15 10:50:21.00	391881.4	4946014.4	2218.9	2.1	6.2	VID_GRAB	
99/09/15 10:50:24.00	391881.4	4946014.4	2218.9	2.1	6.0	VID_GRAB	
99/09/15 10:50:27.00	391883.3	4946016.5	2218.9	2.1	6.3	VID_GRAB	
99/09/15 10:50:28.00	391883.3	4946016.5	2218.9	2.1	6.2	VID_GRAB	
99/09/15 10:50:33.00	391883.3	4946016.5	2218.9	2.2	6.1	VID_GRAB	shimmering water
99/09/15 10:51:33.00	391885.2	4946016.7	2218.6	1.6	24.1	Looks like many chimney structures and pillow lava amalgamation into a wall, ~10 long, heavily sedimented	
99/09/15 10:51:42.00	391885.2	4946016.7	2218.4	1.9	31.1	VID_GRAB	
99/09/15 10:51:42.00	391885.2	4946016.7	2218.3	1.9	30.6		
99/09/15 10:51:53.00	391885.5	4946017.5	2217.8	3.1	42.0	VID_GRAB	

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99/09/15 10:52:02.00	391885.5	4946017.5	2217.5	2.7	43.8	VID_GRAB	
99/09/15 10:52:57.00	391882.5	4946018.8	2216.7	2.7	35.6	East side of hi-T vent field we saw the other day.	
99/09/15 10:53:21.00	391883.7	4946020.7	2216.8	3.2	351.3	Continuing to head north	
99/09/15 10:53:38.00	391882.0	4946026.0	2216.8	4.8	79.2	This wall shows up nicely in the SM2000	
99/09/15 10:55:51.00	391886.3	4946047.0	2216.8	2.9	3.0	Just E of the vent field where HOBO134	
99/09/15 10:59:29.00	391878.5	4946048.4	2216.7	5.5	44.0	Marker 35 was placed at shimmering water	
99/09/15 11:01:30.00	391905.5	4946045.1	2216.2	4.1	98.0	tape change at 1100	
99/09/15 11:04:58.00	391908.0	4946054.6	2216.2	3.5	3.0	Waiting for Medea to move	
99/09/15 11:05:03.00	391908.0	4946054.6	2216.2	3.3	2.9	VID_GRAB	
99/09/15 11:05:26.00	391908.0	4946054.6	2216.2	3.6	2.8	Looking down on a remnant or median structure in the middle of the Cleft	
99/09/15 11:17:40.00	391949.3	4946135.2	2217.9	3.2	63.7	Heading northeast	
99/09/15 11:19:58.00	391949.3	4946171.2	2218.3	1.3	332.9	VID_GRAB	
99/09/15 11:20:19.00	391947.7	4946171.0	2216.9	1.1	331.5	VID_GRAB	
99/09/15 11:20:19.00	391947.7	4946171.0	2216.7	1.2	331.8	VID_GRAB	
99/09/15 11:20:21.00	391947.7	4946171.0	2216.5	1.4	331.9	VID_GRAB	
99/09/15 11:20:28.00	391947.4	4946172.5	2215.0	2.7	331.3	VID_GRAB	
99/09/15 11:21:13.00	391942.4	4946178.2	2214.7	2.6	352.8	Roof remnant	
99/09/15 11:22:08.00	391935.3	4946189.6	2216.2	6.7	31.1	Target 36 is a waypoint	
99/09/15 11:22:35.00	391937.6	4946197.1	2216.1	2.5	90.9	VID_GRAB	
99/09/15 11:22:44.00	391937.6	4946197.1	2216.0	3.1	85.7	VID_GRAB	
99/09/15 11:25:07.00	391964.6	4946236.9	2218.7	5.2	37.9	Heading northeast along the floor	
99/09/15 11:26:59.00	391963.4	4946250.9	2218.9	1.6	330.3	VID_GRAB	
99/09/15 11:27:01.00	391963.4	4946250.9	2218.9	1.6	330.3	VID_GRAB	
99/09/15 11:27:08.00	391961.8	4946253.3	2217.9	2.3	329.9	VID_GRAB	
99/09/15 11:27:10.00	391961.8	4946253.3	2217.9	2.1	330.3	VID_GRAB	
99/09/15 11:27:12.00	391961.8	4946253.3	2217.9	2.4	330.9	VID_GRAB	
99/09/15 11:27:24.00	391961.8	4946253.3	2217.1	2.9	328.0	VID_GRAB	jumbled, folded sheet flow
99/09/15 11:27:40.00	391964.7	4946257.2	2216.9	2.3	308.1	VID_GRAB	
99/09/15 11:27:43.00	391964.7	4946257.2	2216.9	2.2	304.7	VID_GRAB	
99/09/15 11:27:45.00	391964.7	4946257.2	2216.9	2.0	300.6	VID_GRAB	
99/09/15 11:27:48.00	391960.0	4946252.3	2216.9	1.7	296.6	VID_GRAB	
99/09/15 11:28:01.00	391960.0	4946252.3	2216.9	1.6	286.9	VID_GRAB	
99/09/15 11:28:02.00	391960.0	4946252.3	2216.9	1.6	279.6	VID_GRAB	
99/09/15 11:28:06.00	391960.0	4946252.3	2216.9	1.6	263.9	VID_GRAB	
99/09/15 11:29:35.00	391953.5	4946251.2	2216.9	1.9	335.4	We're going to do a cross-section of the Cleft (now at waypoint 36)	
99/09/15 11:34:30.00	391982.5	4946247.6	2216.3	1.7	77.3	VID_GRAB	
99/09/15 11:34:33.00	391982.5	4946247.6	2216.3	1.7	60.3	VID_GRAB	
99/09/15 11:34:57.00	391985.6	4946249.7	2216.1	1.4	39.6	VID_GRAB	

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99/09/15 11:35:04.00	391985.6	4946249.7	2215.9	1.6	38.5	VID_GRAB	
99/09/15 11:36:04.00	391986.4	4946251.4	2214.8	3.0	94.5	VID_GRAB	
99/09/15 11:36:10.00	391987.2	4946252.2	2215.0	2.8	108.9	VID_GRAB	
99/09/15 11:36:19.00	391987.2	4946252.2	2214.6	3.1	108.5	VID_GRAB	Collapse rubble and remnants
99/09/15 11:36:45.00	391984.6	4946250.7	2214.5	2.0	112.6	VID_GRAB	
99/09/15 11:36:48.00	391988.3	4946250.6	2214.5	1.6	112.1	VID_GRAB	
99/09/15 11:36:53.00	391988.3	4946250.6	2214.5	1.7	112.1	VID_GRAB	
99/09/15 11:37:06.00	391988.3	4946250.6	2214.1	1.7	111.4	VID_GRAB	
99/09/15 11:38:29.00	391986.2	4946249.6	2214.0	3.7	106.6	Heading east to Target 37, will turn around and go back across Cleft	
99/09/15 11:48:55.00	392011.8	4946259.7	2213.2	3.0	83.2	VID_GRAB	
99/09/15 11:49:06.00	392012.0	4946258.6	2212.8	3.5	99.6	VID_GRAB	
99/09/15 11:49:07.00	392012.0	4946258.6	2212.7	3.5	105.7	VID_GRAB	
99/09/15 11:50:24.00	392014.6	4946261.5	2212.8	2.2	47.9	VID_GRAB	
99/09/15 11:51:00.00	392018.2	4946264.7	2212.4	2.7	73.7	Ship will start moving back to west, we will swing underneath to get to target 37	
99/09/15 11:51:04.00	392018.2	4946264.7	2212.5	2.6	73.0	VID_GRAB	
99/09/15 11:52:22.00	392022.8	4946268.3	2211.0	3.8	85.7	VID_GRAB	
99/09/15 11:52:33.00	392024.0	4946269.0	2211.0	4.1	101.3	VID_GRAB	Coming up the east wall of the Cleft
99/09/15 11:52:35.00	392024.0	4946269.0	2211.0	3.9	105.0	VID_GRAB	
99/09/15 11:52:38.00	392024.0	4946269.0	2211.0	3.0	104.2	VID_GRAB	
99/09/15 11:52:42.00	392024.0	4946269.0	2210.7	3.6	105.6	VID_GRAB	
99/09/15 11:53:00.00	392025.1	4946270.0	2209.8	4.1	129.7	VID_GRAB	Folded sheet flow
99/09/15 12:05:42.00	392043.5	4946266.7	2209.3	2.2	265.9	Heading back to west	
99/09/15 12:05:58.00	392036.8	4946264.3	2208.9	2.2	253.9	Lobate flows	
99/09/15 12:06:04.00	392036.8	4946264.3	2208.7	2.3	254.1	VID_GRAB	
99/09/15 12:06:19.00	392036.0	4946265.5	2208.6	2.2	262.3	Lobate flows along top of wall	
99/09/15 12:06:27.00	392035.6	4946267.3	2208.3	2.6	269.1	Approaching east wall drop	
99/09/15 12:07:10.00	392028.0	4946262.0	2209.0	2.1	268.6	Going over east wall	
99/09/15 12:10:18.00	392015.8	4946262.0	2213.2	3.3	261.6	VID_GRAB	
99/09/15 12:10:31.00	392010.4	4946262.2	2213.4	3.5	262.7	Small remnant/sulfide spire	
99/09/15 12:11:24.00	392003.3	4946261.7	2212.9	3.7	282.2	VID_GRAB	Collapse rubble on the floor
99/09/15 12:12:00.00	391992.7	4946266.0	2215.2	1.3	280.9		
99/09/15 12:12:12.00	391986.7	4946263.5	2214.4	3.1	283.6	Approaching another step down	
99/09/15 12:13:14.00	391973.9	4946261.3	2217.0	1.4	279.7	VID_GRAB	
99/09/15 12:13:48.00	391974.6	4946266.2	2218.3	3.7	279.8	VID_GRAB	
99/09/15 12:13:58.00	391974.6	4946266.2	2218.7	4.4	276.5	VID_GRAB	lobate flows
99/09/15 12:14:07.00	391971.9	4946265.8	2218.4	4.1	276.1	VID_GRAB	Sheet flow
99/09/15 12:14:15.00	391971.9	4946265.8	2218.3	3.0	276.0	VID_GRAB	

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99/09/15 12:14:16.00	391971.9	4946265.8	2218.3	2.9	276.1	VID_GRAB	
99/09/15 12:14:17.00	391971.9	4946265.8	2218.3	2.9	276.4	VID_GRAB	
99/09/15 12:14:19.00	391971.9	4946265.8	2218.3	2.8	276.5	VID_GRAB	
99/09/15 12:14:52.00	391964.8	4946268.1	2218.0	1.2	277.3	approaching another step down	
99/09/15 12:14:54.00	391964.8	4946268.1	2217.8	1.6	277.4	VID_GRAB	
99/09/15 12:14:56.00	391964.8	4946268.1	2217.4	1.8	276.2	VID_GRAB	
99/09/15 12:15:00.00	391964.8	4946268.1	2217.5	1.9	275.9	VID_GRAB	
99/09/15 12:15:02.00	391964.8	4946268.1	2217.5	1.7	275.9	VID_GRAB	
99/09/15 12:15:03.00	391964.8	4946268.1	2217.4	1.6	276.4	VID_GRAB	
99/09/15 12:15:04.00	391964.8	4946268.1	2217.3	1.6	276.4	VID_GRAB	
99/09/15 12:15:05.00	391964.8	4946268.1	2217.2	1.6	279.2	VID_GRAB	
99/09/15 12:15:06.00	391959.3	4946267.4	2217.2	1.6	280.3	VID_GRAB	
99/09/15 12:15:10.00	391959.3	4946267.4	2217.1	1.6	269.1	VID_GRAB	
99/09/15 12:15:17.00	391959.3	4946267.4	2217.3	0.8	268.0	Jumbled sheet flow	
99/09/15 12:15:58.00	391953.1	4946268.9	2218.6	1.2	281.8	VID_GRAB	
99/09/15 12:16:40.00	391943.0	4946266.2	2217.3	3.3	231.2	VID_GRAB	
99/09/15 12:16:50.00	391942.4	4946267.6	2217.3	3.1	229.6	VID_GRAB	Folded sheet flows
99/09/15 12:17:39.00	391938.1	4946265.3	2217.4	2.6	303.3	VID_GRAB	
99/09/15 12:17:41.00	391938.1	4946265.3	2217.7	2.3	302.9	VID_GRAB	
99/09/15 12:17:44.00	391938.1	4946265.3	2217.7	2.1	303.7	VID_GRAB	
99/09/15 12:17:45.00	391938.1	4946265.3	2217.7	2.2	303.4	VID_GRAB	
99/09/15 12:17:47.00	391934.3	4946265.8	2217.6	1.9	302.0	VID_GRAB	
99/09/15 12:17:53.00	391934.3	4946265.8	2217.3	1.3	302.2	VID_GRAB	Sheet flow
99/09/15 12:17:56.00	391934.3	4946265.8	2217.2	1.1	302.8	VID_GRAB	
99/09/15 12:17:59.00	391934.3	4946265.8	2217.1	1.0	302.5	VID_GRAB	
99/09/15 12:18:28.00	391934.3	4946265.8	2215.9	2.2	285.9	Striations in sheet flow oriented NE	
99/09/15 12:18:31.00	391934.3	4946265.8	2215.5	2.4	286.0	VID_GRAB	
99/09/15 12:18:36.00	391934.3	4946265.8	2215.3	2.5	284.9	Collapse rubble	
99/09/15 12:18:39.00	391934.3	4946265.8	2215.4	2.5	284.8	spire	
99/09/15 12:18:41.00	391934.3	4946265.8	2215.3	2.5	284.9	VID_GRAB	
99/09/15 12:18:46.00	391934.3	4946265.8	2215.1	2.7	284.8	VID_GRAB	
99/09/15 12:19:00.00	391928.0	4946271.2	2214.9	2.9	284.1	VID_GRAB	Remnants, collapse rubble, lava pillar
99/09/15 12:19:15.00	391927.3	4946271.1	2214.4	3.8	283.6	VID_GRAB	
99/09/15 12:19:16.00	391927.3	4946271.1	2214.1	3.8	283.5	VID_GRAB	
99/09/15 12:19:17.00	391927.3	4946271.1	2213.8	3.9	283.8	VID_GRAB	
99/09/15 12:19:18.00	391927.3	4946271.1	2213.5	4.2	284.3	VID_GRAB	
99/09/15 12:19:19.00	391927.3	4946271.1	2213.2	4.5	284.6	VID_GRAB	
99/09/15 12:19:20.00	391927.3	4946271.1	2213.2	4.6	284.7	VID_GRAB	
99/09/15 12:19:21.00	391927.3	4946271.1	2212.9	4.8	284.8	VID_GRAB	
99/09/15 12:19:22.00	391927.3	4946271.1	2212.6	5.3	284.7	VID_GRAB	
99/09/15 12:19:23.00	391927.3	4946271.1	2212.3	5.6	284.7	VID_GRAB	
99/09/15 12:19:24.00	391927.3	4946271.1	2212.3	5.6	284.7	VID_GRAB	
99/09/15 12:19:24.00	391927.3	4946271.1	2212.0	5.8	284.7	VID_GRAB	
99/09/15 12:19:25.00	391927.3	4946271.1	2212.0	5.8	284.7	VID_GRAB	
99/09/15 12:19:26.00	391927.4	4946270.3	2211.7	6.0	284.7	VID_GRAB	

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99/09/15 12:19:27.00	391927.4	4946270.3	2211.4	6.0	284.6	VID_GRAB	
99/09/15 12:19:28.00	391927.4	4946270.3	2211.4	6.3	284.4	VID_GRAB	
99/09/15 12:19:29.00	391927.4	4946270.3	2211.1	6.6	284.2	VID_GRAB	
99/09/15 12:19:30.00	391927.4	4946270.3	2210.8	6.9	283.5	VID_GRAB	
99/09/15 12:19:31.00	391927.4	4946270.3	2210.7	6.6	283.4	VID_GRAB	
99/09/15 12:19:36.00	391927.4	4946270.3	2211.0	6.3	284.1	VID_GRAB	
99/09/15 12:20:06.00	391927.8	4946270.0	2211.1	4.6	289.2	VID_GRAB	Linear remnants in floor
99/09/15 12:20:14.00	391927.2	4946270.7	2211.1	2.9	280.0	VID_GRAB	
99/09/15 12:20:14.00	391927.2	4946270.7	2211.1	2.9	278.6	VID_GRAB	
99/09/15 12:20:16.00	391927.2	4946270.7	2211.1	2.9	276.4	VID_GRAB	
99/09/15 12:20:17.00	391927.2	4946270.7	2211.1	2.8	275.5	VID_GRAB	
99/09/15 12:20:33.00	391923.5	4946270.1	2211.2	2.5	270.6	VID_GRAB	Approaching west wall
99/09/15 12:20:41.00	391923.5	4946270.1	2211.1	2.2	246.2	Lobates	
99/09/15 12:20:43.00	391923.5	4946270.1	2211.2	1.9	246.8	VID_GRAB	
99/09/15 12:20:45.00	391923.5	4946270.1	2211.1	1.8	247.6	VID_GRAB	
99/09/15 12:20:59.00	391921.5	4946270.9	2211.1	0.7	238.3	VID_GRAB	
99/09/15 12:21:02.00	391921.5	4946270.9	2211.1	0.8	230.1	VID_GRAB	
99/09/15 12:21:07.00	391918.3	4946271.0	2211.1	0.8	212.0	VID_GRAB	
99/09/15 12:21:27.00	391914.8	4946268.6	2211.3	1.5	210.3	VID_GRAB	More collapse pits in lobate flow
99/09/15 12:21:28.00	391914.8	4946268.6	2211.4	30.0	211.2	VID_GRAB	
99/09/15 12:21:32.00	391914.8	4946268.6	2211.7	30.0	209.0	VID_GRAB	
99/09/15 12:21:40.00	391914.8	4946268.6	2210.9	0.9	210.6	VID_GRAB	
99/09/15 12:21:46.00	391914.8	4946268.6	2210.9	0.8	209.4	VID_GRAB	
99/09/15 12:21:51.00	391914.2	4946269.1	2210.7	1.0	197.7	VID_GRAB	
99/09/15 12:21:56.00	391914.2	4946269.1	2210.6	1.1	212.7	VID_GRAB	
99/09/15 12:21:58.00	391914.2	4946269.1	2210.6	1.2	216.0	VID_GRAB	
99/09/15 12:21:59.00	391914.2	4946269.1	2210.5	1.2	220.2	VID_GRAB	
99/09/15 12:22:02.00	391914.2	4946269.1	2210.4	1.3	234.4	VID_GRAB	
99/09/15 12:22:18.00	391914.8	4946270.3	2210.2	2.0	253.8	VID_GRAB	
99/09/15 12:24:15.00	391887.1	4946295.8	2208.1	3.2	259.0	Lobate flows	
99/09/15 12:27:47.00	391851.9	4946304.6	2208.2	3.6	230.5	End Cleft profile	
99/09/15 12:28:48.00	391846.6	4946304.4	2208.8	3.2	248.5	Will begin to head north to Benchmark 9	
99/09/15 12:34:36.00	391856.1	4946294.0	2208.9	3.1	24.0	Heading to Benchmark 9	
99/09/15 12:36:21.00	391862.6	4946306.8	2208.6	3.1	358.9	Lobate flows	
99/09/15 12:36:48.00	391858.2	4946298.5	2208.7	3.4	347.0	collapse pits	
99/09/15 12:36:59.00	391858.2	4946298.5	2208.7	3.1	347.2	VID_GRAB	
99/09/15 12:37:58.00	391857.7	4946298.3	2207.9	3.8	346.7	Actually more than collapse pits, drainout features looking from above.	
99/09/15 12:40:28.00	391843.8	4946312.8	2209.8	2.2	334.4	VID_GRAB	more drainout features
99/09/15 12:40:50.00	391839.7	4946312.1	2210.6	1.7	334.4	VID_GRAB	
99/09/15 12:44:38.00	391859.1	4946336.2	2211.6	1.6	29.8	VID_GRAB	ropy sheet flows
99/09/15 12:44:56.00	391861.7	4946340.3	2211.9	1.2	30.3	VID_GRAB	

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99/09/15 12:46:03.00	391870.1	4946351.4	2210.7	1.5	54.1	VID_GRAB	crossing a descending wall
99/09/15 12:46:50.00	391870.9	4946354.7	2210.6	3.0	12.4	drainout features	
99/09/15 12:47:29.00	391874.0	4946370.8	2210.6	1.8	319.0	lobate	
99/09/15 12:47:59.00	391870.1	4946377.0	2210.3	2.7	335.2	passing more drainout features	
99/09/15 12:51:45.00	391867.1	4946425.0	2212.1	2.4	18.3	VID_GRAB	Lobate flow
99/09/15 12:52:25.00	391867.5	4946429.8	2211.5	2.0	33.3	Lobate flow with scattered small collapsed lobates	
99/09/15 12:53:47.00	391883.6	4946460.4	2212.7	1.8	353.3	Sheet flow	
99/09/15 12:54:00.00	391883.6	4946460.4	2212.3	2.1	352.7	VID_GRAB	Sheet flow/lobate contact
99/09/15 12:54:02.00	391883.6	4946460.4	2212.3	2.2	352.6	VID_GRAB	
99/09/15 12:54:10.00	391883.4	4946461.2	2212.2	2.2	352.3	VID_GRAB	
99/09/15 12:54:15.00	391883.4	4946461.2	2212.3	2.0	350.8	VID_GRAB	
99/09/15 12:54:32.00	391880.5	4946459.9	2212.9	2.0	353.1	Lobate flow over sheet flow	
99/09/15 12:55:05.00	391880.0	4946465.8	2212.7	1.5	351.4	VID_GRAB	
99/09/15 12:55:10.00	391882.9	4946471.1	2212.6	1.6	351.9	VID_GRAB	
99/09/15 12:55:17.00	391882.9	4946471.1	2212.5	1.7	352.6	VID_GRAB	
99/09/15 12:55:20.00	391882.9	4946471.1	2212.4	1.8	346.8	VID_GRAB	
99/09/15 12:56:03.00	391883.9	4946484.3	2211.5	3.1	345.8	Primarily lobate flows	
99/09/15 12:59:43.00	391883.2	4946492.0	2211.9	1.8	5.3	Lobates w/ small collapse pits	
99/09/15 13:00:18.00	391883.2	4946492.0	2211.6	2.3	7.6	Going over a step or drop	
99/09/15 13:01:02.00	391883.2	4946492.0	2211.3	2.5	6.5	Heading north still to BM9	
99/09/15 13:01:08.00	385768.7	4947217.2	2212.1	1.8	5.8	VID_GRAB	
99/09/15 13:01:17.00	385768.7	4947217.2	2211.7	3.9	354.9	VID_GRAB	Remnant structures
99/09/15 13:01:19.00	385768.7	4947217.2	2211.7	4.1	357.0	VID_GRAB	
99/09/15 13:01:50.00	386026.3	4947243.9	2212.5	3.0	354.3	VID_GRAB	Sheet flows at the base of this larger collapse
99/09/15 13:02:08.00	386026.3	4947243.9	2213.1	2.3	354.0	VID_GRAB	
99/09/15 13:02:12.00	386026.3	4947243.9	2213.0	2.0	357.5	VID_GRAB	
99/09/15 13:02:14.00	386026.3	4947243.9	2212.9	2.0	357.2	VID_GRAB	
99/09/15 13:02:16.00	386026.3	4947243.9	2212.8	2.5	0.0	VID_GRAB	
99/09/15 13:02:19.00	386026.3	4947243.9	2212.7	2.5	357.6	VID_GRAB	
99/09/15 13:02:21.00	386026.3	4947243.9	2212.7	2.1	355.3	VID_GRAB	
99/09/15 13:02:22.00	386026.3	4947243.9	2212.6	1.9	349.9	VID_GRAB	
99/09/15 13:02:23.00	386026.3	4947243.9	2212.6	1.7	346.8	VID_GRAB	
99/09/15 13:02:28.00	386026.3	4947243.9	2212.5	2.0	347.0	VID_GRAB	
99/09/15 13:02:41.00	386026.3	4947243.9	2212.4	1.6	348.4	VID_GRAB	lobates & drainback features
99/09/15 13:02:57.00	386026.3	4947243.9	2212.4	1.6	350.2	Lots of collapses in this area	
99/09/15 13:04:24.00	391891.4	4946583.9	2211.9	2.6	346.0	VID_GRAB	

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99/09/15 13:09:27.00	391897.4	4946636.5	2212.3	2.3	10.9	Lobates changed video tapes @ 1304	
99/09/15 13:12:12.00	391896.5	4946639.3	2212.0	2.4	10.9	VID_GRAB	
99/09/15 13:12:23.00	391892.5	4946637.7	2212.0	2.4	10.1	VID_GRAB	
99/09/15 13:12:25.00	391892.5	4946637.7	2212.0	2.3	9.5	VID_GRAB	
99/09/15 13:12:40.00	391895.0	4946639.6	2212.0	2.5	8.1	VID_GRAB	NEAT lava flow
99/09/15 13:12:53.00	391895.0	4946639.6	2211.9	2.7	10.2	Highlights	Previous lava swirls
99/09/15 13:18:56.00	391910.0	4946665.6	2211.1	3.7	316.4	VID_GRAB	Approaching BM9
99/09/15 13:19:56.00	391894.6	4946681.2	2214.0	0.7	310.0	Back at BM9, will take pressure reading	
99/09/15 13:33:59.00	391888.6	4946677.7	2214.5	30.0	358.3	Start readings	
99/09/15 13:35:18.00	391892.3	4946681.4	2214.5	30.0	358.1	VID_GRAB	
99/09/15 13:35:41.00	391893.9	4946682.9	2214.5	30.0	358.1	Imagenex not logging	
99/09/15 13:35:50.00	391890.2	4946679.9	2214.5	30.0	358.1	Stop pressure reading	
99/09/15 13:37:12.00	391893.4	4946684.0	2214.3	22.6	3.2	Start pressure reading	
99/09/15 13:37:36.00	391893.4	4946682.7	2214.3	30.0	3.2	VID_GRAB	Reseated paroscientific, started measurements again
99/09/15 13:37:42.00	391893.4	4946682.7	2214.3	1.3	3.1	VID_GRAB	
99/09/15 13:42:08.00	391891.6	4946681.8	2214.3	30.0	3.1	VID_GRAB	
99/09/15 13:47:23.00	391892.8	4946681.8	2214.3	30.0	3.1	Stop pressure readings	
99/09/15 13:49:46.00	391891.8	4946681.4	2214.4	30.0	2.9	Heading north to search for USGS Tripod 2	
99/09/15 13:57:10.00	391894.0	4946692.9	2212.1	1.7	9.3	VID_GRAB	Linear collapse trough
99/09/15 13:57:11.00	391894.0	4946692.9	2212.1	1.7	7.4	VID_GRAB	
99/09/15 13:57:58.00	391892.2	4946695.6	2212.4	1.6	2.6	VID_GRAB	Lava pillar
99/09/15 13:58:02.00	391892.2	4946695.6	2212.4	1.7	2.0	VID_GRAB	
99/09/15 13:58:03.00	391892.2	4946695.6	2212.4	1.8	2.4	VID_GRAB	
99/09/15 13:58:06.00	391892.2	4946695.6	2212.4	1.7	2.8	VID_GRAB	
99/09/15 13:58:10.00	391892.2	4946695.6	2212.4	1.4	2.6	VID_GRAB	
99/09/15 13:58:42.00	391897.6	4946706.3	2212.4	1.9	2.5	VID_GRAB	
99/09/15 13:58:58.00	391897.6	4946706.3	2212.3	3.0	2.1	Linear remnant with sponges	
99/09/15 13:59:02.00	391897.6	4946706.3	2212.3	2.9	2.4	VID_GRAB	
99/09/15 13:59:06.00	391897.6	4946706.3	2212.3	3.0	5.2	VID_GRAB	
99/09/15 13:59:12.00	391897.6	4946706.3	2212.3	2.9	15.9	VID_GRAB	
99/09/15 13:59:19.00	391897.6	4946706.3	2212.3	2.9	27.3	VID_GRAB	
99/09/15 13:59:45.00	391905.0	4946717.4	2212.9	1.0	30.7	VID_GRAB	
99/09/15 13:59:53.00	391903.7	4946716.9	2212.5	1.3	30.1	VID_GRAB	
99/09/15 13:59:58.00	391903.7	4946716.9	2212.5	1.3	30.3	VID_GRAB	
99/09/15 14:00:08.00	391905.6	4946717.9	2212.5	1.3	30.3	VID_GRAB	
99/09/15 14:00:27.00	391902.5	4946714.6	2212.5	1.3	30.5	VID_GRAB	anemones and sponges on a remnant
99/09/15 14:00:30.00	391902.5	4946714.6	2212.5	1.3	30.3	VID_GRAB	

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99/09/15 14:00:32.00	391902.5	4946714.6	2212.5	1.3	30.3	VID_GRAB	
99/09/15 14:00:33.00	391902.5	4946714.6	2212.5	1.4	30.4	VID_GRAB	
99/09/15 14:00:40.00	391902.5	4946714.6	2212.5	1.4	30.5	VID_GRAB	
99/09/15 14:00:53.00	391898.6	4946712.5	2212.5	1.4	30.4	VID_GRAB	
99/09/15 14:00:54.00	391898.6	4946712.5	2212.5	1.4	30.5	VID_GRAB	
99/09/15 14:00:55.00	391898.6	4946712.5	2212.5	1.4	30.6	VID_GRAB	
99/09/15 14:00:59.00	391898.6	4946712.5	2212.5	1.4	30.5	VID_GRAB	
99/09/15 14:01:22.00	391904.5	4946716.4	2212.5	1.3	30.9	VID_GRAB	Looking at lobates and the pillar w/ the anemones & sponges
99/09/15 14:01:30.00	391906.8	4946718.6	2212.5	1.4	30.6	VID_GRAB	
99/09/15 14:02:01.00	391906.8	4946718.6	2212.5	1.3	30.8	VID_GRAB	lava contact?
99/09/15 14:02:04.00	391906.8	4946718.6	2212.5	1.3	30.5	VID_GRAB	
99/09/15 14:02:16.00	391905.0	4946716.4	2212.5	1.3	30.6	VID_GRAB	lava contact?
99/09/15 14:03:31.00	391910.8	4946734.5	2212.0	2.5	7.4	VID_GRAB	
99/09/15 14:03:33.00	391910.8	4946734.5	2212.0	2.5	7.6	VID_GRAB	
99/09/15 14:03:36.00	391910.8	4946734.5	2212.0	2.7	7.7	VID_GRAB	
99/09/15 14:03:59.00	391913.7	4946743.6	2212.3	2.4	355.1	VID_GRAB	weights
99/09/15 14:04:15.00	391914.6	4946746.9	2213.0	0.8	354.5	VID_GRAB	
99/09/15 14:04:26.00	391914.6	4946746.9	2211.7	2.2	356.5	VID_GRAB	
99/09/15 14:04:56.00	391914.5	4946749.2	2211.6	3.0	355.2	VID_GRAB	linear collapse pits
99/09/15 14:07:05.00	391905.9	4946763.1	2211.5	2.3	0.6	VID_GRAB	lobate flows
99/09/15 14:16:24.00	391934.0	4946804.7	2211.1	3.0	12.3	Searching for USGS tripod 2	
99/09/15 14:34:01.00	391872.6	4946844.4	2211.5	3.5	298.6	USGS tripod2 found!	
99/09/15 14:34:57.00	391865.6	4946851.2	2211.6	3.0	289.0	VID_GRAB	
99/09/15 14:35:08.00	391855.5	4946846.5	2212.0	2.6	286.6	VID_GRAB	
99/09/15 14:35:11.00	391855.5	4946846.5	2212.4	2.2	288.4	VID_GRAB	
99/09/15 14:38:32.00	391862.6	4946854.0	2214.7	30.0	304.1	VID_GRAB	
99/09/15 14:40:38.00	391862.1	4946853.7	2214.6	30.0	303.2	VID_GRAB	
99/09/15 14:41:08.00	391862.1	4946853.7	2214.6	4.9	303.1	Start readings now	
99/09/15 14:41:15.00	391862.1	4946853.7	2214.6	30.0	303.1	VID_GRAB	
99/09/15 14:41:42.00	391862.1	4946853.7	2214.6	30.0	303.2	VID_GRAB	Position of sensor
99/09/15 14:41:50.00	391862.1	4946853.7	2214.6	30.0	303.2	VID_GRAB	
99/09/15 14:41:54.00	391862.1	4946853.7	2214.6	30.0	303.2	Start now	
99/09/15 14:42:10.00	391862.1	4946853.7	2214.6	30.0	303.2	VID_GRAB	REAL final position of instrument
99/09/15 14:43:56.00	391862.1	4946853.7	2214.6	30.0	303.2	X=391862 Y = 4946854	
99/09/15 14:48:08.00	391855.7	4946847.4	2214.5	30.0	303.1	Imagenex logging again	
99/09/15 14:49:48.00	391855.7	4946847.4	2214.5	30.0	302.9	Imagenex off again	
99/09/15 14:50:35.00	391855.7	4946847.4	2214.5	30.0	303.0	Doing pressure sensor reading on Tripod 2	
99/09/15 14:51:33.00	391855.7	4946847.4	2214.5	30.0	303.0	This target was only 15 meters off what we thought it should be	

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99/09/15 14:52:48.00	391857.3	4946850.8	2214.5	30.0	303.4	Finished with pressure reading	
99/09/15 14:55:38.00	391861.6	4946855.0	2214.4	1.7	310.4	VID_GRAB	looking at position of pressure sensor on Tripod 2
99/09/15 14:57:46.00	391863.4	4946857.0	2212.4	2.4	270.0	VID_GRAB	top of tripod 2
99/09/15 14:59:08.00	391862.2	4946856.6	2212.2	2.5	279.2	orientation of pressure sensor (the one we did) on leg at about 60 degrees	
99/09/15 15:00:16.00	391859.9	4946854.0	2212.4	2.3	343.7	VID_GRAB	
99/09/15 15:06:17.00	391865.3	4946835.1	2212.3	2.7	167.1	changed the video	
99/09/15 15:07:27.00	391866.8	4946824.9	2212.3	2.5	167.6	VID_GRAB	beautiful lobate with limpets
99/09/15 15:10:37.00	391870.0	4946796.3	2212.2	2.1	164.6	VID_GRAB	
99/09/15 15:13:21.00	391875.9	4946787.6	2211.3	4.0	144.4	correction: What I was calling limpets are sponges	
99/09/15 15:15:23.00	391886.7	4946747.2	2213.4	1.7	168.2	VID_GRAB	sponge line
99/09/15 15:15:40.00	391884.4	4946744.3	2213.4	1.9	168.1	VID_GRAB	sponges and bathtub rings
99/09/15 15:15:57.00	391887.3	4946745.3	2212.2	1.2	169.3	VID_GRAB	close up of sponges
99/09/15 15:17:10.00	391885.4	4946718.2	2211.7	2.9	160.9	VID_GRAB	lobates
99/09/15 15:18:36.00	391886.1	4946699.3	2211.8	2.4	146.1	VID_GRAB	
99/09/15 15:19:29.00	391893.2	4946690.5	2211.8	2.5	143.5	VID_GRAB	rattail
99/09/15 15:19:44.00	391893.2	4946690.5	2211.9	2.5	143.9	VID_GRAB	
99/09/15 15:20:09.00	391893.7	4946689.4	2212.6	1.6	143.6	VID_GRAB	rattail
99/09/15 15:20:46.00	391890.4	4946682.6	2212.9	1.4	69.8	We are at benchmark 9	
99/09/15 15:21:23.00	391890.4	4946682.6	2213.4	0.7	349.9	VID_GRAB	lineated sheet flow
99/09/15 15:27:11.00	391888.4	4946679.5	2214.0	30.0	331.1	Starting pressure reading at BM 9	
99/09/15 15:37:41.00	391888.7	4946679.1	2213.9	30.0	330.5	VID_GRAB	
99/09/15 15:37:57.00	391890.2	4946680.3	2213.9	30.0	330.5	Finished with pressure reading at BM 9	
99/09/15 15:41:17.00	391890.6	4946680.0	2211.9	2.5	49.1	heading out. We will eventually try to find the other USGS tower to the far northeast	
99/09/15 15:46:46.00	391903.0	4946687.8	2211.9	3.2	41.3	VID_GRAB	drainback feature with sponges
99/09/15 15:50:08.00	391920.2	4946698.3	2211.9	2.9	41.0	VID_GRAB	big pillow
99/09/15 15:50:30.00	391922.2	4946699.8	2211.9	2.7	41.2	VID_GRAB	
99/09/15 15:51:18.00	391919.7	4946696.7	2212.6	2.2	48.2	VID_GRAB	pillow with drainback in the background
99/09/15 15:52:14.00	391925.8	4946701.3	2211.0	2.2	41.9	there are no sponges on the pillow, but there are on the drainback feature	
99/09/15 15:52:48.00	391942.0	4946712.1	2211.0	2.2	40.4	VID_GRAB	drainback feature

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99/09/15 16:06:06.00	392036.7	4946778.9	2211.0	2.5	29.9	VID_GRAB	
99/09/15 16:08:39.00	392054.5	4946793.9	2210.9	1.6	16.6	VID_GRAB	going over the dropout
99/09/15 16:09:26.00	392062.5	4946801.1	2211.3	2.3	15.3	VID_GRAB	
99/09/15 16:10:22.00	392066.0	4946803.3	2210.6	1.4	17.2	VID_GRAB	falling over a second drop
99/09/15 16:11:07.00	392079.5	4946814.5	2210.7	3.4	12.7	VID_GRAB	big pillar
99/09/15 16:11:35.00	392086.0	4946823.0	2210.8	2.5	42.4	VID_GRAB	drainback
99/09/15 16:12:52.00	392096.9	4946825.2	2210.7	1.4	353.0	VID_GRAB	peering over the edge of the cleft - getting to the main part
99/09/15 16:13:10.00	392096.9	4946825.2	2210.7	1.6	342.6	VID_GRAB	right on the edge
99/09/15 16:13:49.00	392102.8	4946833.5	2210.7	4.6	303.4	VID_GRAB	arches and pillars at edge
99/09/15 16:15:26.00	392098.5	4946825.2	2214.1	1.8	49.1	VID_GRAB	looking downslope
99/09/15 16:17:14.00	392108.9	4946822.3	2214.2	1.5	47.0	VID_GRAB	heavily sedimented sheet flow at edge of jumbled flow
99/09/15 16:18:22.00	392108.9	4946822.3	2214.2	2.9	22.3	VID_GRAB	drained out and collapsed with sheet still partially in placed
99/09/15 16:19:10.00	392125.5	4946831.9	2216.2	1.1	67.7	VID_GRAB	An Alvin weight?
99/09/15 16:20:59.00	392138.4	4946847.5	2213.2	2.4	140.0	VID_GRAB	still on a bench. Could be the edge of the main cleft coming up
99/09/15 16:21:32.00	392143.4	4946851.6	2213.2	2.8	87.8	VID_GRAB	iron sediments
99/09/15 16:23:02.00	392149.5	4946857.1	2213.8	4.3	343.7	VID_GRAB	the edge again
99/09/15 16:23:29.00	392157.0	4946875.1	2213.5	2.8	345.2	VID_GRAB	this is the edge
99/09/15 16:27:23.00	392159.6	4946876.2	2214.5	6.2	192.9	VID_GRAB	
99/09/15 16:27:45.00	392159.6	4946876.2	2215.6	5.5	192.2	VID_GRAB	drips
99/09/15 16:28:04.00	392159.6	4946876.2	2216.5	5.2	192.2	VID_GRAB	lava drips coating the wall
99/09/15 16:28:11.00	392159.6	4946876.2	2216.5	4.8	197.7	VID_GRAB	
99/09/15 16:29:00.00	392156.5	4946865.8	2216.4	4.5	249.7	VID_GRAB	jumbled layer didn't go over edge
99/09/15 16:29:12.00	392156.5	4946865.8	2216.9	3.8	249.0	VID_GRAB	jumbled over the edge here
99/09/15 16:29:32.00	392156.5	4946865.8	2217.3	2.7	249.9	VID_GRAB	drainover
99/09/15 16:29:40.00	392156.5	4946865.8	2217.2	2.7	249.4	going down to bottom	
99/09/15 16:29:58.00	392156.5	4946865.8	2217.7	2.9	248.2	VID_GRAB	top, going down
99/09/15 16:30:09.00	392156.5	4946865.8	2217.8	2.7	249.3	VID_GRAB	
99/09/15 16:30:29.00	392156.5	4946865.8	2218.5	2.0	249.7	VID_GRAB	lava waterfall

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99/09/15 16:30:42.00	392156.5	4946865.8	2218.7	1.9	249.5	VID_GRAB	
99/09/15 16:31:22.00	392156.5	4946865.8	2218.5	3.5	221.5	VID_GRAB	more drip
99/09/15 16:31:33.00	392156.5	4946865.8	2218.5	2.7	203.0	VID_GRAB	
99/09/15 16:32:03.00	392156.5	4946865.8	2218.5	2.7	203.9	VID_GRAB	looking over the edge
99/09/15 16:32:22.00	392156.5	4946865.8	2218.5	3.9	202.4	VID_GRAB	complex wall
99/09/15 16:33:02.00	392156.5	4946865.8	2218.4	2.0	291.2	VID_GRAB	
99/09/15 16:33:25.00	392156.5	4946865.7	2218.4	1.6	314.2	VID_GRAB	bottom of jumbled tongue
99/09/15 16:34:04.00	392155.1	4946863.2	2218.4	1.6	336.9	VID_GRAB	looking north along the cleft
99/09/15 16:34:15.00	392155.1	4946863.2	2218.5	1.5	316.6	VID_GRAB	
99/09/15 16:34:52.00	392153.7	4946861.7	2218.5	2.3	234.5	keep heading north to check out the wall	
99/09/15 16:35:12.00	392153.7	4946861.7	2219.0	2.1	224.5	VID_GRAB	going down to bottom, then will head north
99/09/15 16:35:30.00	392153.7	4946861.7	2219.7	2.7	205.1	VID_GRAB	
99/09/15 16:35:43.00	392153.7	4946861.7	2220.0	2.8	202.9	VID_GRAB	
99/09/15 16:36:02.00	392158.2	4946861.7	2220.0	3.0	199.5	VID_GRAB	
99/09/15 16:36:14.00	392156.3	4946861.4	2220.6	2.6	200.3	VID_GRAB	
99/09/15 16:36:37.00	392156.3	4946861.4	2221.2	2.4	193.6	VID_GRAB	still going down
99/09/15 16:37:12.00	392156.3	4946861.4	2222.0	1.9	162.6	VID_GRAB	curtain folding crust
99/09/15 16:37:20.00	392156.3	4946861.4	2222.0	1.9	164.7	VID_GRAB	
99/09/15 16:37:49.00	392156.3	4946861.4	2222.5	1.6	254.5	VID_GRAB	
99/09/15 16:38:00.00	392156.3	4946861.4	2222.7	1.3	321.6	VID_GRAB	near the bottom
99/09/15 16:38:26.00	392156.3	4946861.4	2223.0	0.9	52.2	VID_GRAB	turning into pillows here
99/09/15 16:39:19.00	392156.3	4946861.4	2222.9	1.3	353.9	VID_GRAB	pillows perpendicular to axis
99/09/15 16:39:35.00	392156.3	4946861.4	2222.9	1.4	335.4	VID_GRAB	looking south along strike
99/09/15 16:40:43.00	392156.3	4946861.4	2222.9	1.3	231.3	VID_GRAB	along the wall
99/09/15 16:41:54.00	392156.3	4946861.4	2222.8	1.4	342.4	moving north laterally so we can look at west wall	
99/09/15 16:41:58.00	392156.3	4946861.4	2222.8	1.4	309.5	VID_GRAB	
99/09/15 16:42:37.00	392156.3	4946861.4	2222.3	1.8	302.7	VID_GRAB	
99/09/15 16:43:12.00	392156.3	4946861.4	2222.3	1.6	290.4	VID_GRAB	Nav not too good since we went down in the ditch
99/09/15 16:43:35.00	392156.3	4946861.4	2222.0	1.4	287.8	VID_GRAB	
99/09/15 16:43:54.00	392156.3	4946861.4	2221.8	1.2	289.5	VID_GRAB	
99/09/15 16:44:06.00	392156.3	4946861.4	2220.6	2.1	286.6	coming up wall half way	
99/09/15 16:44:13.00	392156.3	4946861.4	2219.9	2.7	288.5	VID_GRAB	
99/09/15 16:44:33.00	392162.7	4946872.8	2218.4	4.2	286.3	VID_GRAB	
99/09/15 16:44:40.00	392162.7	4946872.8	2218.5	4.1	301.7	Getting fixes now	
99/09/15 16:44:47.00	392162.0	4946873.9	2218.3	4.2	294.8	VID_GRAB	

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99/09/15 16:45:39.00	392163.4	4946876.1	2218.4	3.4	278.0	VID_GRAB	
99/09/15 16:45:51.00	392163.2	4946878.7	2218.4	2.9	278.2	VID_GRAB	
99/09/15 16:46:09.00	392168.4	4946869.3	2218.4	2.9	319.8	VID_GRAB	rubble
99/09/15 16:46:20.00	392168.4	4946869.3	2218.4	3.4	328.4	VID_GRAB	at the edge
99/09/15 16:47:49.00	392184.4	4946833.7	2219.9	2.7	311.0	VID_GRAB	
99/09/15 16:48:32.00	392171.7	4946889.2	2220.2	3.4	307.9	VID_GRAB	starting back up
99/09/15 16:49:11.00	392175.2	4946884.1	2218.6	3.3	251.4	VID_GRAB	trend of sheet flow perpendicular to cleft
99/09/15 16:49:19.00	392175.2	4946884.1	2217.9	2.6	259.1	VID_GRAB	
99/09/15 16:49:53.00	392171.0	4946897.9	2214.7	4.7	257.4	VID_GRAB	spires at top
99/09/15 16:50:17.00	392169.2	4946895.9	2213.8	3.6	199.8	VID_GRAB	
99/09/15 16:50:24.00	392169.2	4946895.9	2212.9	3.8	186.0	VID_GRAB	
99/09/15 16:50:49.00	392164.9	4946893.9	2212.6	2.1	208.6	VID_GRAB	
99/09/15 16:51:10.00	392159.0	4946888.3	2212.6	1.0	264.2	We will now head to northeast to find last USGS benchmark	
99/09/15 16:52:39.00	392157.7	4946886.7	2209.5	4.0	59.1	VID_GRAB	Going up in water column to do Imagenex to the tripod
99/09/15 16:53:09.00	392161.7	4946890.4	2208.0	5.4	58.0	Imagenex turned on	
99/09/15 16:53:17.00	392161.7	4946890.4	2208.0	5.2	57.7	turning video off	
99/09/15 17:01:10.00	392197.3	4946906.3	2192.8	22.2	65.4	Imagenex on and seems to be working	
99/09/15 17:04:51.00	392239.3	4946934.0	2190.8	21.6	54.5	heading toward northeast, USGS tripod 3	
99/09/15 17:56:20.00	392808.1	4947339.5	2193.1	22.7	55.4	EOL? Going down to the bottom	
99/09/15 18:04:51.00	392819.4	4947347.4	2213.6	2.7	232.0	VID_GRAB	USGS 3
99/09/15 18:05:50.00	392816.3	4947343.3	2213.1	3.1	242.6	VID_GRAB	tower with Turtle weights
99/09/15 18:11:58.00	392810.8	4947336.5	2216.3	30.0	247.3	changed videos	
99/09/15 18:12:22.00	392809.7	4947336.7	2216.3	30.0	247.1	VID_GRAB	
99/09/15 18:18:40.00	392810.2	4947332.7	2216.3	30.0	245.5	Starting the pressure measurement	
99/09/15 18:18:46.00	392810.2	4947332.7	2216.3	30.0	245.5	VID_GRAB	
99/09/15 18:28:20.00	392809.8	4947336.6	2216.3	30.0	245.4	End of pressure reading	
99/09/15 18:28:47.00	392812.9	4947336.0	2216.3	30.0	245.3	tripod 3: x=2810 y=7337	
99/09/15 18:34:07.00	392813.5	4947336.5	2215.5	0.9	256.8	VID_GRAB	
99/09/15 18:34:50.00	392811.1	4947337.6	2213.4	3.0	230.2	VID_GRAB	
99/09/15 18:35:18.00	392811.7	4947338.7	2213.3	3.0	230.4	VID_GRAB	
99/09/15 18:35:29.00	392811.3	4947338.0	2213.3	3.1	232.5	VID_GRAB	
99/09/15 18:37:10.00	392810.6	4947337.7	2203.6	12.9	229.3	going back up. will do an imagenex line from here to benchmark 9	
99/09/15 18:37:23.00	392810.6	4947337.7	2198.4	17.8	229.0	video off	
99/09/15 18:39:40.00	392808.0	4947333.4	2188.1	27.7	227.4	SOL from tripod to BM 9	
99/09/15 20:00:07.00	391934.8	4946689.0	2191.2	21.7	237.4	EOL	

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99/09/15 20:00:12.00	391934.8	4946689.0	2192.0	20.8	243.9	Heading back down to the bottom	
99/09/15 20:01:19.00	391940.8	4946689.4	2205.0	7.9	255.3	Start video tapes	
99/09/15 20:03:25.00	391928.9	4946684.2	2209.1	4.3	303.6	Back on bottom	
99/09/15 20:09:43.00	391901.9	4946689.6	2209.4	4.5	228.9	Benchmark 9	
99/09/15 20:11:06.00	391892.1	4946681.9	2212.6	1.7	299.2	VID_GRAB	Benchmark 9
99/09/15 20:16:02.00	391890.4	4946686.5	2214.3	30.0	301.0	VID_GRAB	
99/09/15 20:20:06.00	391882.8	4946675.8	2214.4	29.6	300.3	Starting pressure measurement	
99/09/15 20:31:57.00	391885.2	4946674.9	2212.2	2.3	220.5	Done, moving along bottom	
99/09/15 20:32:41.00	391880.9	4946671.9	2212.2	2.5	223.9	Lobate flows	
99/09/15 20:32:57.00	391880.9	4946671.9	2211.8	2.7	230.8	Lobes and pillows	
99/09/15 20:33:20.00	391880.9	4946671.9	2207.1	7.1	227.6	End of dive	
99/09/15 20:33:37.00	391880.9	4946671.9	2201.6	12.9	226.2	Stop tapes	

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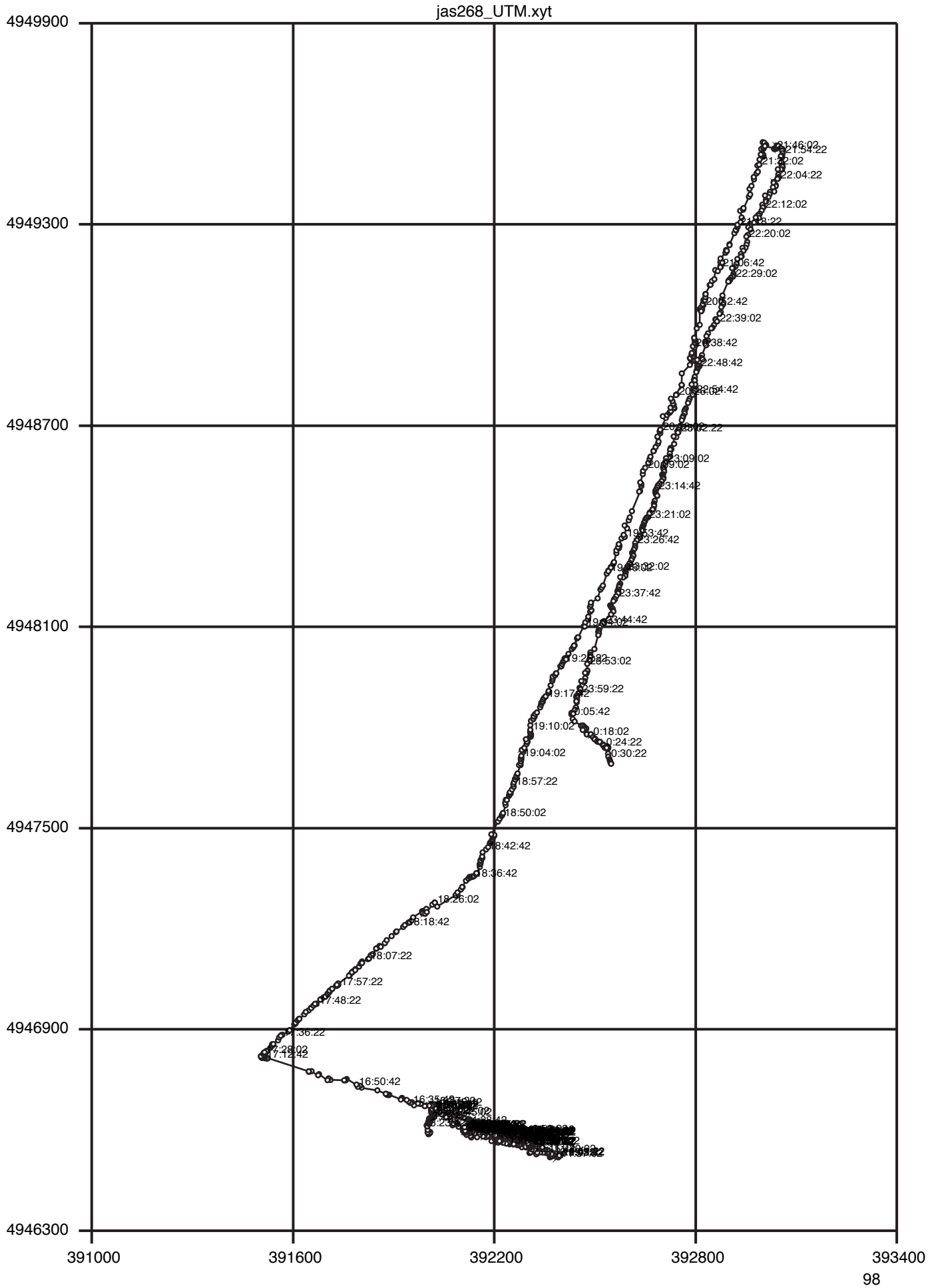
South Cleft


jas268_UTM.xyt
4949900
4949300
4948700
4948100
4947500
4946900
4946300
391000
391600
392200
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393400
21:46:02
21:54:22
22:04:22
22:12:02
22:20:02
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22:39:02
22:48:42
23:09:02
23:14:42
23:21:02
23:26:42
23:37:42
23:53:02
23:59:22
0:05:42
0:18:02
0:24:22
0:30:22
19:04:02
18:57:22
18:50:02
18:42:42
18:36:42
18:26:02
18:18:42
18:07:22
17:57:22
17:48:22
16:50:42

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JAS268

Date/Time	UTM X	UTM Y	Depth	Alt	Hdg	Comments	
99/09/16 01:28:14.00	391170.2	4947917.3	-0.6	30.0	201.9	Preparing for Jason Dive 268 - Deploy 4 extensometer benchmarks, 1 extensometer, Imagenex lines	
99/09/16 01:30:21.00	391170.2	4947917.3	-0.4	30.0	348.7	Jason powering up	
99/09/16 01:33:06.00	391170.2	4947917.3	-0.8	8.8	181.4	Jason in the water	
99/09/16 01:33:23.00	391170.2	4947917.3	0.8	30.0	168.2	Pin pulled	
99/09/16 01:34:27.00	392960.7	4945746.4	2.1	30.0	171.7	Medea in the water	
99/09/16 01:35:32.00	392966.6	4945741.0	13.9	30.0	143.9	Doppler isn't working	
99/09/16 01:37:59.00	392955.4	4945785.0	50.6	30.0	146.7	50m	
99/09/16 01:41:30.00	393082.3	4945875.0	100.8	30.0	137.8	100m	
99/09/16 02:19:31.00	382298.0	4944460.4	1001.0	22.4	105.9	1000m	
99/09/16 03:07:04.00	392208.7	4946440.9	2159.5	30.0	101.3	Still going down.	
99/09/16 03:15:31.00	392044.8	4946561.7	2180.0	30.0	293.2	We're using the homer beacon to find the benchmark. We're at 2180 meters depth	
99/09/16 03:18:28.00	392009.1	4946593.9	2207.3	4.2	335.1	VID_GRAB	
99/09/16 03:19:06.00	392007.7	4946591.0	2209.6	1.9	350.6	VID_GRAB	We are on the bottom
99/09/16 03:23:15.00	392001.2	4946614.9	2205.7	5.2	3.7	VID_GRAB	
99/09/16 03:25:33.00	392004.9	4946622.3	2205.7	4.9	341.0	VID_GRAB	benchmark 8 with glass ball
99/09/16 03:28:02.00	392007.8	4946622.1	2205.6	5.0	331.1	VID_GRAB	
99/09/16 03:30:55.00	392007.4	4946634.0	2210.8	30.0	294.2	VID_GRAB	BM 8 as it landed. Quite the angle of recline. On lobates
99/09/16 03:36:36.00	392018.8	4946641.8	2204.1	6.2	10.2	moving BM8 to its designated position.	
99/09/16 03:42:05.00	392016.6	4946654.9	2210.0	0.8	330.5	VID_GRAB	
99/09/16 03:54:43.00	392018.1	4946663.7	2210.6	1.3	312.2	VID_GRAB	
99/09/16 03:56:28.00	392019.1	4946664.6	2209.9	1.3	307.9	VID_GRAB	BM 8 positioned in its final resting spot
99/09/16 04:02:07.00	392019.5	4946667.0	2211.2	0.8	207.7	BM8 - doing a pressure sensor reading	
99/09/16 04:12:20.00	392017.7	4946665.5	2211.3	30.0	217.6	done with pressure reading	
99/09/16 04:12:36.00	392017.2	4946665.5	2211.3	30.0	217.5	x=2018 y=6665 final position for Benchmark 8	
99/09/16 04:14:25.00	392014.8	4946663.1	2206.6	4.2	223.2	Taking off and heading to BM 7	
99/09/16 04:19:23.00	392044.7	4946655.3	2213.0	2.2	105.9	VID_GRAB	
99/09/16 04:20:45.00	392047.7	4946654.8	2212.9	2.0	105.9	VID_GRAB	
99/09/16 04:25:33.00	392107.4	4946637.0	2209.0	4.5	98.5	VID_GRAB	
99/09/16 04:27:13.00	392123.3	4946632.8	2209.1	4.7	113.3	VID_GRAB	

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99/09/16 04:27:46.00	392127.0	4946631.6	2209.1	5.3	243.8	VID_GRAB	
99/09/16 04:28:10.00	392125.2	4946621.3	2211.3	3.2	242.5	VID_GRAB	gorgeous drainback feature
99/09/16 04:28:22.00	392129.1	4946626.3	2211.4	3.0	251.9	VID_GRAB	same feature
99/09/16 04:28:26.00	392129.1	4946626.3	2211.7	2.7	251.5	VID_GRAB	
99/09/16 04:28:55.00	392123.4	4946618.6	2212.7	1.2	254.6	VID_GRAB	
99/09/16 04:29:54.00	392130.5	4946627.0	2209.4	5.0	243.7	VID_GRAB	
99/09/16 04:46:39.00	392332.3	4946567.6	2204.0	7.2	339.6	spotted BM 7 with extensometer	
99/09/16 04:47:20.00	392329.0	4946573.8	2204.9	6.5	325.9	VID_GRAB	BM 7 with extensometer
99/09/16 04:48:03.00	392331.6	4946579.1	2207.6	4.0	326.2	VID_GRAB	
99/09/16 04:48:12.00	392331.6	4946579.1	2207.4	4.2	325.8	VID_GRAB	
99/09/16 04:49:27.00	392328.0	4946583.9	2209.7	1.8	319.3	VID_GRAB	BM 7 and extensometer
99/09/16 04:51:58.00	392324.8	4946585.0	2210.0	1.4	9.1	VID_GRAB	
99/09/16 04:54:04.00	392322.0	4946580.5	2210.5	1.2	46.0	VID_GRAB	crab and extensometer
99/09/16 04:56:27.00	392325.3	4946586.7	2210.3	1.0	54.9	VID_GRAB	
99/09/16 05:01:30.00	392326.6	4946586.3	2208.8	2.6	18.6	Trying to figure out how we're going to get the thing from point A to point B	
99/09/16 05:05:37.00	392330.7	4946589.6	2207.8	3.8	263.9	VID_GRAB	hooking the extensometer
99/09/16 05:07:26.00	392326.2	4946587.3	2206.9	4.4	264.2	Bringing the instrument to its final resting place	
99/09/16 05:12:26.00	392326.7	4946583.8	2211.1	0.7	305.8	VID_GRAB	Benchmark7 landed
99/09/16 05:14:58.00	392324.4	4946584.1	2211.1	1.4	317.5	The reason for the landing on the last line is that the anchor line is dragged and can not move	
99/09/16 05:18:48.00	392326.4	4946588.5	2211.5	1.9	213.5	VID_GRAB	anchor is giving us trouble
99/09/16 05:20:12.00	392325.6	4946588.1	2211.4	1.2	212.9	The anchor is down in a hole	
99/09/16 05:24:49.00	392327.5	4946587.2	2211.5	1.1	212.6	We need to get rid of the anchor to move the thing. Looks like we're going to have to cut it	
99/09/16 05:31:49.00	392330.7	4946591.2	2211.4	1.3	212.9	VID_GRAB	attempting to cut the anchor line
99/09/16 05:34:17.00	392330.3	4946589.6	2209.7	1.9	214.6	VID_GRAB	
99/09/16 05:37:29.00	392330.5	4946590.6	2210.2	1.3	212.8	VID_GRAB	still trying to cut the anchor line

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99/09/16 05:42:05.00	392331.1	4946590.5	2211.3	0.8	195.6	VID_GRAB	trying to cut the line at the anchor end
99/09/16 05:43:53.00	392326.1	4946584.7	2211.3	0.8	195.2	VID_GRAB	crab and line
99/09/16 05:53:24.00	392330.1	4946588.6	2211.3	30.0	197.0	Whoops. Seems I forgot to replace the video tape on time. Missed about 0.5 hour of video. Most of the time we have been here trying to cut the anchor free	
99/09/16 05:53:35.00	392330.1	4946588.6	2211.3	30.0	198.6	VID_GRAB	
99/09/16 05:53:59.00	392330.1	4946588.6	2211.3	30.0	198.3	Changed the tapes.	
99/09/16 05:57:29.00	392330.0	4946588.1	2211.3	0.8	193.3	Still trying to cut the anchor free	
99/09/16 06:05:40.00	392330.9	4946589.8	2211.5	30.0	138.4	VID_GRAB	
99/09/16 06:19:52.00	392323.7	4946584.5	2211.5	1.4	144.6	VID_GRAB	almost got it
99/09/16 06:37:55.00	392323.6	4946585.4	2210.8	0.8	137.2	VID_GRAB	
99/09/16 06:38:07.00	392323.6	4946585.4	2210.5	1.2	129.6	VID_GRAB	Got the anchor loose
99/09/16 06:39:33.00	392325.4	4946588.7	2211.4	30.0	126.7		
99/09/16 06:39:48.00	392326.5	4946590.4	2211.4	30.0	126.8	Need to move the extensometer and benchmark about 180 meters	
99/09/16 06:40:30.00	392326.7	4946590.6	2208.7	2.7	173.4	VID_GRAB	rattail
99/09/16 06:43:37.00	392322.9	4946583.5	2198.2	12.9	243.5	moving along with the extensometer. Heading to its new home sweet home	
99/09/16 07:16:31.00	392116.0	4946596.7	2196.4	14.3	287.4	Looking for flatter spot to put extensometer down	
99/09/16 07:17:26.00	392123.9	4946605.0	2205.9	7.8	289.8	Back on bottom	
99/09/16 07:17:57.00	392125.6	4946605.8	2208.3	2.4	292.4	Drained out lobes	
99/09/16 07:18:09.00	392125.6	4946605.8	2208.3	2.4	317.1	VID_GRAB	
99/09/16 07:21:33.00	392119.6	4946609.9	2208.7	3.1	316.9	VID_GRAB	dropped the extensometer
99/09/16 07:21:42.00	392118.7	4946608.6	2208.7	2.8	316.8	VID_GRAB	
99/09/16 07:22:57.00	392119.0	4946608.6	2210.3	1.1	307.0	VID_GRAB	
99/09/16 07:23:08.00	392119.0	4946608.6	2210.8	0.7	306.3	VID_GRAB	extensometer on lobe
99/09/16 07:23:15.00	392116.9	4946610.1	2210.8	1.6	306.6	Need to reposition it slightly	
99/09/16 07:28:25.00	392123.0	4946605.8	2203.6	10.0	258.8	Acoustic test for extensometer, rising 50 m up in the water column	
99/09/16 07:32:40.00	392123.7	4946601.3	2158.0	30.0	255.8	Resting here, beginning test	
99/09/16 07:34:04.00	392126.5	4946604.3	2146.3	30.0	245.6	Powering up Jason and moving 50 m away	
99/09/16 07:37:50.00	392137.3	4946605.8	2150.6	30.0	242.2	Stopping video tapes	

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99/09/16 07:44:50.00	392172.8	4946600.7	2149.4	30.0	54.4	Unable to talk to extensometer	
99/09/16 07:48:03.00	392171.4	4946607.5	2150.3	30.0	94.8	Going back down to the bottom	
99/09/16 07:50:52.00	392160.6	4946602.3	2207.8	6.4	96.9	Start video tapes again	
99/09/16 07:51:43.00	392168.2	4946602.1	2209.6	1.7	100.4	Back on the bottom	
99/09/16 07:51:52.00	392168.2	4946602.1	2209.5	1.4	100.6	Traversing over lobes	
99/09/16 07:52:03.00	392176.6	4946605.1	2209.3	2.0	101.8	VID_GRAB	Edge of collapse area
99/09/16 07:52:13.00	392176.6	4946605.1	2209.3	2.0	98.6	Bathtub rings along opposite wall	
99/09/16 07:52:26.00	392182.2	4946602.8	2209.3	3.5	93.0	Back on lobate flow	
99/09/16 07:53:52.00	392193.2	4946593.3	2209.4	1.8	90.1	Drained out lobes	
99/09/16 07:54:10.00	392198.2	4946594.9	2209.5	1.5	87.0	Smaller collapse	
99/09/16 07:54:26.00	392203.9	4946596.1	2209.4	1.8	92.6	Pile of rubble in collapse	
99/09/16 07:55:55.00	392210.0	4946592.7	2209.4	1.5	92.6	Edge of cleft just ahead	
99/09/16 07:56:47.00	392215.6	4946594.3	2209.4	1.6	94.3	Step down into ropy sheet flow	
99/09/16 07:57:07.00	392219.4	4946592.3	2209.3	2.7	92.6	pillar	
99/09/16 07:58:48.00	392233.4	4946591.6	2209.3	3.1	92.5	Smoother, more heavily sedimented area	
99/09/16 07:58:57.00	392244.4	4946586.1	2209.4	3.2	90.1	Ropy to lineated sheet flow	
99/09/16 07:59:32.00	392250.5	4946584.2	2209.4	2.8	93.3	On edge of collapse and lobate flow	
99/09/16 08:02:10.00	392275.9	4946578.3	2209.4	2.2	83.4	Changing video tapes	
99/09/16 08:02:56.00	392277.3	4946577.1	2209.4	2.3	84.1	Lobate flow	
99/09/16 08:06:25.00	392298.3	4946570.4	2209.4	2.6	83.1	Another benchmark just ahead	
99/09/16 08:08:03.00	392284.3	4946571.1	2209.3	2.6	278.6	Sedimented collapse area	
99/09/16 08:08:11.00	392284.3	4946571.1	2209.4	2.6	278.2	Still conducting modem tests	
99/09/16 08:13:22.00	392258.2	4946577.0	2209.3	2.6	279.9	Pillows, crab (the swimming kind!)	
99/09/16 08:14:17.00	392251.3	4946579.5	2209.4	2.6	282.0	Changing to lineated sheet flow	
99/09/16 08:15:14.00	392234.7	4946584.5	2209.4	2.6	283.8	Collapse, rubble	
99/09/16 08:18:54.00	392212.8	4946589.7	2208.7	2.6	279.0	Back on lobate flow	
99/09/16 08:20:48.00	392199.4	4946590.1	2208.7	2.6	284.2	Alternating intact lobes and collapse regions	
99/09/16 08:21:20.00	392191.3	4946592.9	2208.7	2.6	282.8	crab	
99/09/16 08:23:35.00	392180.3	4946594.9	2208.8	2.6	282.7	VID_GRAB	sky light
99/09/16 08:23:56.00	392180.3	4946594.9	2208.8	2.6	282.9	pillars	
99/09/16 08:31:29.00	392171.6	4946603.3	2208.0	2.6	296.5	End of modem test for now	
99/09/16 08:32:11.00	392172.7	4946600.2	2207.9	2.6	213.5	Going back to pick up and relocate two more benchmarks	
99/09/16 08:32:27.00	392164.1	4946595.8	2208.1	2.6	237.6	First, we'll do a pressure measurement at the extensometer	

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99/09/16 08:42:40.00	392129.6	4946604.3	2208.0	6.7	282.2	Extensometer in sight	
99/09/16 08:44:58.00	392119.3	4946608.5	2209.4	2.0	281.5	VID_GRAB	extensometer at FINAL SITE
99/09/16 08:46:52.00	392116.3	4946605.3	2210.4	1.0	309.8	Ooops, we are moving it again!	
99/09/16 08:49:38.00	392113.0	4946606.7	2210.2	1.2	310.8	VID_GRAB	relocating the extensometer
99/09/16 08:55:27.00	392113.7	4946602.7	2211.3	30.0	329.4	Put it down in a new spot; going to back off and see how stable it is	
99/09/16 08:56:52.00	392113.0	4946603.7	2210.7	0.8	21.4	VID_GRAB	trying to make the instrument sit flat on the lobe
99/09/16 08:58:39.00	392112.4	4946604.2	2211.5	1.4	21.9	VID_GRAB	
99/09/16 08:58:48.00	392112.4	4946604.2	2211.5	1.6	21.9	VID_GRAB	pushed third leg down
99/09/16 09:01:39.00	392110.7	4946602.5	2210.7	0.7	83.9	VID_GRAB	still not sitting flat on all three legs
99/09/16 09:03:54.00	392108.9	4946597.6	2210.7	0.7	97.3	VID_GRAB	
99/09/16 09:06:54.00	392107.8	4946599.8	2211.4	1.2	48.6	VID_GRAB	pressure sensor next to extensometer
99/09/16 09:11:37.00	392113.0	4946604.2	2211.4	1.2	48.1	VID_GRAB	start pressure measurement
99/09/16 09:22:02.00	392112.6	4946603.1	2211.5	1.0	46.8	end of measurement	
99/09/16 09:22:22.00	392112.9	4946602.1	2211.5	1.0	46.9	Heading back to the drop site to relocate another benchmark	
99/09/16 09:23:56.00	392112.7	4946602.5	2203.5	7.8	66.5	Going to pick up benchmark 6	
99/09/16 09:44:29.00	392299.4	4946570.3	2207.9	4.6	98.7	At a benchmark	
99/09/16 09:45:37.00	392309.9	4946574.5	2211.0	1.3	105.7	At benchmark 6!	
99/09/16 09:47:56.00	392309.2	4946567.8	2212.2	1.0	100.1	VID_GRAB	pulling the slip
99/09/16 09:56:36.00	392313.3	4946570.8	2210.0	2.1	59.7	Benchmark 6 in tow	
99/09/16 10:05:57.00	392269.4	4946592.7	2205.9	5.9	289.1	Changing video tapes 1001	
99/09/16 10:13:56.00	392203.9	4946589.0	2211.3	0.9	318.5	Deployed benchmark	
99/09/16 10:14:15.00	392204.7	4946586.5	2210.9	1.3	317.6	Benchmark 6 placed	
99/09/16 10:16:43.00	392198.2	4946580.9	2212.2	30.0	320.9	Start pressure measurement	
99/09/16 10:26:55.00	392202.1	4946584.3	2212.2	30.0	320.2	VID_GRAB	End measurement
99/09/16 10:28:24.00	392196.9	4946581.9	2209.8	2.8	269.9	Underway to get final benchmark	
99/09/16 10:37:02.00	392257.1	4946579.1	2207.9	4.0	281.8	VID_GRAB	
99/09/16 10:38:58.00	392254.6	4946571.2	2207.9	4.1	48.9	Looking for Benchmark 5	
99/09/16 10:50:05.00	392296.6	4946549.3	2208.0	4.5	60.6	Spotted BM5	
99/09/16 10:53:47.00	392310.3	4946558.1	2211.6	0.8	67.5	Looking for a good spot to place benchmark 5	

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99/09/16 10:55:25.00	392308.5	4946557.1	2212.4	16.2	63.6	Removing pull pin to anchor	
99/09/16 10:55:27.00	392308.5	4946557.1	2212.4	30.0	63.6	VID_GRAB	
99/09/16 10:55:40.00	392308.2	4946556.7	2212.4	30.0	63.5	VID_GRAB	Removing pull pin
99/09/16 11:17:56.00	392309.0	4946557.4	2212.8	30.0	102.3	Final position of BM5 x=392308 y= 4946557	
99/09/16 11:18:36.00	392309.3	4946557.1	2212.8	23.1	101.0	VID_GRAB	BM5
99/09/16 11:18:43.00	392309.3	4946557.1	2212.8	30.0	101.0	Start measurements	
99/09/16 11:27:33.00	392307.7	4946555.1	2212.8	30.0	98.9	VID_GRAB	
99/09/16 11:27:50.00	392307.7	4946555.1	2212.8	30.0	98.9	VID_GRAB	
99/09/16 11:28:29.00	392310.2	4946558.2	2212.8	15.0	99.1	end pressure measurement	
99/09/16 11:44:08.00	392395.0	4946527.1	2212.9	1.8	55.8	Approaching Benchmark 4, will take another pressure reading	
99/09/16 11:48:10.00	392396.1	4946526.4	2213.1	30.0	54.8	Start pressure reading at BM4	
99/09/16 11:48:22.00	392397.0	4946525.9	2213.1	30.0	54.8	VID_GRAB	Benchmark 4 pressure reading
99/09/16 11:52:18.00	392396.5	4946525.3	2213.1	30.0	53.8	1151 instrument jostled	
99/09/16 12:02:16.00	392396.8	4946527.8	2213.1	30.0	53.6	stop pressure reading	
99/09/16 12:08:23.00	392372.2	4946527.8	2209.2	4.0	293.5	Heading back to Benchmark 7 to test modem on extensometer	
99/09/16 12:25:55.00	392214.9	4946576.1	2199.2	12.7	295.5	Back at Extensometer 7, testing modem	
99/09/16 12:27:03.00	392208.0	4946578.0	2198.1	13.8	300.4	Actually we just went over benchmark 6, approaching Extensometer 7	
99/09/16 12:31:13.00	392142.0	4946594.5	2205.6	8.5	288.6	Approaching BM7	
99/09/16 12:31:48.00	392142.0	4946594.5	2209.0	6.0	295.7	Testing modem	
99/09/16 12:32:47.00	392135.5	4946593.3	2208.5	6.2	295.7	SM2000, IMA, and altimeters shut down	
99/09/16 12:50:21.00	392122.6	4946596.6	2208.7	6.2	2.4	Suspended ships nav to eliminate those pings from interfering with modem test (even though the frequencies are very different)	
99/09/16 12:51:33.00	392127.9	4946602.0	2209.1	6.2	277.5	Turning back on nav	
99/09/16 12:52:49.00	392125.7	4946604.1	2209.9	6.2	272.2	Modem test unsuccessful	
99/09/16 12:53:36.00	392121.6	4946600.1	2209.9	6.2	266.6	All other instruments back on line	
99/09/16 12:54:00.00	392126.0	4946601.3	2209.8	6.2	262.0	Moving along the bottom towards Benchmark 5.	
99/09/16 12:56:59.00	392134.8	4946604.7	2211.1	6.2	110.4	On the way to BM5 we will look at the geology in a trough to the SE	

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99/09/16 12:58:22.00	392139.1	4946601.6	2213.7	2.1	108.3	Lava pillars with sponges, folded sheet flows on the floor	
99/09/16 12:59:17.00	392140.8	4946600.3	2213.4	2.0	18.6	VID_GRAB	Lava pillars
99/09/16 13:00:20.00	392138.8	4946597.8	2214.2	1.2	340.2	VID_GRAB	jumbled sheet flows
99/09/16 13:00:22.00	392138.8	4946597.8	2214.2	1.4	343.8	VID_GRAB	
99/09/16 13:02:06.00	392138.3	4946609.0	2213.8	1.9	295.2	VID_GRAB	lava pillar
99/09/16 13:02:12.00	392138.3	4946609.0	2213.8	1.8	290.0	VID_GRAB	
99/09/16 13:02:24.00	392135.1	4946606.6	2213.8	1.9	290.5	VID_GRAB	
99/09/16 13:02:44.00	392134.3	4946606.5	2213.8	1.8	290.1	Looking towards the west wall of the trough	
99/09/16 13:02:46.00	392134.3	4946606.5	2213.8	1.8	289.9	VID_GRAB	
99/09/16 13:02:52.00	392134.3	4946606.5	2213.8	1.9	289.6	VID_GRAB	west wall of trough
99/09/16 13:02:54.00	392134.3	4946606.5	2213.8	1.9	289.8	VID_GRAB	
99/09/16 13:02:57.00	392134.3	4946606.5	2213.7	1.9	289.6	VID_GRAB	
99/09/16 13:03:04.00	392134.3	4946606.5	2213.7	1.9	289.4	VID_GRAB	
99/09/16 13:03:13.00	392134.3	4946606.5	2213.7	1.8	289.6	VID_GRAB	
99/09/16 13:03:14.00	392134.1	4946607.1	2213.7	1.9	298.3	VID_GRAB	
99/09/16 13:03:15.00	392134.1	4946607.1	2213.7	2.0	305.9	VID_GRAB	
99/09/16 13:03:16.00	392134.1	4946607.1	2213.7	2.0	312.3	VID_GRAB	
99/09/16 13:03:17.00	392134.1	4946607.1	2213.7	2.0	324.4	VID_GRAB	
99/09/16 13:03:19.00	392134.1	4946607.1	2213.7	2.0	343.8	VID_GRAB	
99/09/16 13:03:50.00	392133.4	4946605.7	2213.6	1.8	108.9	Turning to east to head across trough	
99/09/16 13:03:57.00	392139.3	4946607.1	2213.7	1.9	102.9	VID_GRAB	
99/09/16 13:04:02.00	392139.3	4946607.1	2213.7	2.2	98.7	VID_GRAB	
99/09/16 13:04:11.00	392139.3	4946607.1	2213.7	2.1	79.7	VID_GRAB	
99/09/16 13:04:15.00	392142.4	4946606.0	2213.7	2.0	70.8	VID_GRAB	
99/09/16 13:04:19.00	392142.4	4946606.0	2213.8	2.0	84.8	VID_GRAB	
99/09/16 13:04:35.00	392142.4	4946606.0	2213.7	2.0	86.4	VID_GRAB	remnants on the floor
99/09/16 13:04:37.00	392142.4	4946606.0	2213.7	2.0	86.3	VID_GRAB	
99/09/16 13:05:42.00	392145.5	4946603.9	2213.8	1.2	112.1	VID_GRAB	
99/09/16 13:06:00.00	392145.4	4946602.2	2213.8	1.1	113.8	VID_GRAB	
99/09/16 13:06:48.00	392146.2	4946602.6	2213.8	1.2	108.0	VID_GRAB	
99/09/16 13:07:04.00	392146.3	4946601.0	2213.8	1.2	104.5	VID_GRAB	
99/09/16 13:07:24.00	392142.6	4946600.2	2213.8	1.0	102.7	Keep heading east	
99/09/16 13:07:26.00	392142.6	4946600.2	2213.8	0.9	105.9	VID_GRAB	
99/09/16 13:08:05.00	392149.4	4946601.8	2213.3	1.4	105.1	VID_GRAB	
99/09/16 13:08:20.00	392148.9	4946600.5	2213.2	1.5	107.0	VID_GRAB	lava flow patterns in the sheet flows
99/09/16 13:08:23.00	392148.9	4946600.5	2213.2	1.5	106.2	VID_GRAB	
99/09/16 13:08:26.00	392148.9	4946600.5	2213.2	1.6	104.9	VID_GRAB	
99/09/16 13:10:22.00	392148.4	4946600.5	2212.7	1.7	98.7		
99/09/16 13:10:24.00	392148.4	4946600.5	2212.8	1.5	99.2	VID_GRAB	
99/09/16 13:11:24.00	392152.4	4946600.1	2212.7	2.2	97.4	Begin heading back to BM5	

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99/09/16 13:13:02.00	392158.2	4946597.4	2212.1	2.4	116.1	VID_GRAB	
99/09/16 13:13:08.00	392158.2	4946597.4	2212.1	2.6	115.6	VID_GRAB	lava channel
99/09/16 13:13:11.00	392158.2	4946597.4	2212.0	2.7	113.3	VID_GRAB	
99/09/16 13:13:17.00	392158.9	4946595.6	2212.1	2.5	112.8	VID_GRAB	
99/09/16 13:14:07.00	392164.6	4946595.7	2212.1	2.7	115.6	VID_GRAB	
99/09/16 13:14:56.00	392163.7	4946592.5	2211.9	3.0	114.7	VID_GRAB	
99/09/16 13:14:57.00	392163.7	4946592.5	2211.8	3.3	115.2	VID_GRAB	
99/09/16 13:14:59.00	392163.7	4946592.5	2211.7	3.5	115.2	VID_GRAB	
99/09/16 13:15:01.00	392163.7	4946592.5	2211.7	3.5	115.1	VID_GRAB	
99/09/16 13:15:11.00	392163.7	4946592.5	2211.6	3.2	114.5	VID_GRAB	
99/09/16 13:15:16.00	392165.8	4946592.1	2211.6	3.1	115.2	VID_GRAB	
99/09/16 13:15:31.00	392165.8	4946592.1	2211.5	3.3	112.8	VID_GRAB	lava pillars and remnants
99/09/16 13:15:33.00	392166.2	4946592.1	2211.6	3.3	112.7	VID_GRAB	
99/09/16 13:15:56.00	392163.0	4946589.7	2211.2	3.5	109.9	VID_GRAB	
99/09/16 13:15:59.00	392163.0	4946589.7	2211.0	3.6	109.5	VID_GRAB	
99/09/16 13:16:04.00	392163.0	4946589.7	2210.9	3.7	109.6	VID_GRAB	
99/09/16 13:16:09.00	392163.0	4946589.7	2210.9	3.6	109.4	VID_GRAB	
99/09/16 13:16:17.00	392168.1	4946590.6	2210.8	1.2	109.7	VID_GRAB	
99/09/16 13:16:22.00	392168.1	4946590.6	2210.8	1.3	108.9	VID_GRAB	
99/09/16 13:16:52.00	392171.5	4946589.5	2210.7	2.9	110.5	Lobate flows above the collapse trough	
99/09/16 13:17:00.00	392172.0	4946586.9	2210.7	2.7	109.2	VID_GRAB	
99/09/16 13:17:10.00	392172.0	4946586.9	2210.7	2.7	110.6	VID_GRAB	
99/09/16 13:17:39.00	392172.0	4946580.9	2210.3	2.8	111.0	Lobate flows with collapse pits	
99/09/16 13:19:15.00	392180.6	4946581.4	2210.2	2.1	107.5	VID_GRAB	
99/09/16 13:19:43.00	392189.6	4946579.2	2210.2	1.7	108.6	VID_GRAB	
99/09/16 13:19:44.00	392189.6	4946579.2	2210.2	1.7	108.6	VID_GRAB	
99/09/16 13:28:33.00	392269.8	4946562.0	2209.6	2.4	95.1	Homer 12 is on BM5	
99/09/16 13:33:44.00	392294.0	4946550.4	2210.8	2.1	89.8	Preparing to release ball on BM5	
99/09/16 13:45:20.00	392312.9	4946560.3	2211.3	1.7	92.5	Pin pulled 13:44:59 from BM#5	
99/09/16 13:45:29.00	392312.9	4946560.3	2211.3	1.6	92.7	Heading towards BM6	
99/09/16 13:59:11.00	392206.5	4946585.8	2212.0	30.0	12.5	Tape change	
99/09/16 14:04:27.00	392204.0	4946585.4	2212.0	30.0	42.2	at BM6, waiting for bridge	
99/09/16 14:12:22.00	392204.1	4946584.8	2210.5	1.6	31.5	Removed pin from BM6	
99/09/16 14:13:52.00	392204.5	4946584.7	2210.3	1.8	357.6	Heading towards BM7, with the extensometer	
99/09/16 14:14:45.00	392203.4	4946584.7	2210.5	2.5	258.7	VID_GRAB	
99/09/16 14:14:47.00	392203.4	4946584.7	2210.5	1.4	255.5	VID_GRAB	
99/09/16 14:14:57.00	392181.9	4946582.1	2210.5	2.3	308.4	Lobate flows with extensive collapse	
99/09/16 14:15:00.00	392181.9	4946582.1	2210.5	1.8	297.7	VID_GRAB	
99/09/16 14:15:05.00	392181.9	4946582.1	2210.5	1.5	283.9	VID_GRAB	
99/09/16 14:15:26.00	392181.9	4946582.1	2210.6	1.4	287.8	VID_GRAB	
99/09/16 14:15:41.00	392174.8	4946578.8	2210.6	1.4	287.6	Approaching drop into collapse trough	
99/09/16 14:15:43.00	392174.8	4946578.8	2210.7	1.3	287.6	VID_GRAB	

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99/09/16 14:17:11.00	392172.2	4946586.3	2210.5	2.2	289.3	Lava pillars in collapse trough	
99/09/16 14:18:14.00	392168.9	4946585.6	2210.6	3.9	287.7	Homer #21 is on Extensometer 7	
99/09/16 14:22:15.00	392148.5	4946579.0	2210.5	4.6	294.4	Multiple lava pillars	
99/09/16 14:22:48.00	392141.9	4946590.3	2210.5	4.9	285.9	VID_GRAB	
99/09/16 14:22:50.00	392141.9	4946590.3	2210.5	5.0	277.8	VID_GRAB	
99/09/16 14:23:28.00	392136.2	4946595.2	2210.4	1.4	273.5	Frame grabs of extensometer with wall of collapse if foreground	
99/09/16 14:38:10.00	392117.0	4946595.4	2212.1	1.2	338.2	VID_GRAB	
99/09/16 14:38:20.00	392121.1	4946599.0	2212.1	1.2	338.2	VID_GRAB	Releasing extensometer
99/09/16 14:43:59.00	392117.0	4946596.1	2211.8	1.5	235.1	VID_GRAB	crabby
99/09/16 15:05:08.00	392121.4	4946600.0	2210.1	1.8	252.5	VID_GRAB	pulled the plate out to release the glass balls and extensometer
99/09/16 15:06:16.00	392117.7	4946598.9	2210.8	1.1	179.3	There it goes. Extensometer 7 released and heading for the surface	
99/09/16 15:14:14.00	392117.7	4946601.1	2211.7	30.0	6.5	VID_GRAB	Andy's new configuration for extensometers - upside down
99/09/16 15:22:36.00	392117.0	4946602.7	2211.7	30.0	47.3	Getting ready to do pressure reading on BM 7 (without the extensometer) Had to move the thing - so will probably have to do another position reading as well	
99/09/16 15:23:34.00	392116.9	4946603.3	2211.7	30.0	47.7	Starting pressure reading	
99/09/16 15:33:39.00	392116.8	4946602.4	2211.7	30.0	47.1	We're done with this pressure reading	
99/09/16 15:35:43.00	392112.9	4946597.5	2210.7	1.3	12.6	Bye lucky number 7 (quote from Andy)	
99/09/16 15:38:29.00	392115.1	4946609.7	2207.5	4.2	314.1	Heading for BM 8	
99/09/16 15:45:00.00	392067.2	4946639.0	2208.7	5.4	223.6	extensometer at surface	
99/09/16 15:45:06.00	392067.2	4946639.0	2208.8	6.4	177.7	changing video	
99/09/16 15:51:20.00	392016.0	4946658.0	2210.8	1.5	244.9	VID_GRAB	BM 7
99/09/16 15:54:45.00	392019.4	4946664.3	2212.1	30.0	244.6	Starting pressure reading at BM 7	
99/09/16 15:55:00.00	392020.0	4946664.3	2212.1	21.6	244.6	VID_GRAB	BM 7
99/09/16 16:05:26.00	392017.4	4946662.2	2212.1	30.0	246.8	End of pressure reading at BM 7	
99/09/16 16:10:29.00	392015.7	4946660.3	2210.1	2.2	279.1	VID_GRAB	
99/09/16 16:10:49.00	392018.6	4946662.4	2211.1	1.1	315.1	VID_GRAB	preparing to release glass balls

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99/09/16 16:10:59.00	392016.4	4946661.1	2210.8	1.0	330.8	Glass balls on their way to the surface	
99/09/16 16:11:39.00	392015.3	4946662.7	2210.4	1.7	42.4	Tether maintenance	
99/09/16 16:12:56.00	392036.9	4946674.2	2209.0	2.7	42.7	THE LAST 4 ENTRIES HAVE PERTAINED TO BM 8!!!	
99/09/16 16:13:45.00	392033.3	4946671.5	2209.2	2.7	50.9	WE WERE AT BM 8	
99/09/16 16:15:08.00	392026.4	4946674.1	2209.3	2.7	48.7	more tether management	
99/09/16 16:16:35.00	392032.4	4946674.1	2209.2	2.3	50.4	VID_GRAB	looking down into the cleft
99/09/16 16:18:51.00	392027.0	4946674.0	2209.3	2.9	285.7	4 counter clockwise wraps on tether	
99/09/16 16:21:11.00	392031.5	4946666.9	2209.2	2.4	250.7	VID_GRAB	
99/09/16 16:22:48.00	392027.3	4946671.8	2209.2	3.0	344.6	took about 40 minutes for extensometer and glass balls to surface	
99/09/16 16:39:04.00	391924.5	4946694.2	2206.3	7.7	299.4	Started transiting to next site about 10 minutes ago	
99/09/16 16:40:09.00	391921.8	4946691.0	2206.2	6.9	297.5	Heading to BM 12	
99/09/16 17:04:39.00	391646.7	4946775.1	2202.9	7.8	288.7	VID_GRAB	
99/09/16 17:11:14.00	391646.7	4946775.1	2195.6	9.0	290.2	VID_GRAB	beautiful
99/09/16 17:12:25.00	391522.5	4946812.8	2192.1	5.1	270.5	BM 12 in sight	
99/09/16 17:13:43.00	391509.5	4946817.0	2195.3	3.5	272.3	VID_GRAB	BM 12 and rope to floats
99/09/16 17:16:31.00	391505.4	4946816.9	2196.3	1.5	271.4	VID_GRAB	trying to cut mooring line. Made it first time
99/09/16 17:16:52.00	391505.4	4946816.9	2196.4	1.3	270.6	released glass balls from BM 12	
99/09/16 17:17:43.00	391505.4	4946816.9	2196.4	1.2	270.9	PROBABLY A RECORD, 2 SECONDS FROM CUTTING TO RELEASE - WOW	
99/09/16 17:26:55.00	391516.7	4946829.7	2178.7	18.4	23.7	coming up to do imagenex line from BM12 to imagenex line 13	
99/09/16 17:28:37.00	391516.9	4946831.1	2170.2	26.4	24.3	Stop the video	
99/09/16 17:29:44.00	391521.6	4946835.8	2170.1	26.1	25.6	Imagenex doesn't seem to be working??? what next?	
99/09/16 17:30:36.00	391515.0	4946832.0	2170.2	26.9	30.2	Cycling the power	
99/09/16 17:34:01.00	391541.4	4946856.4	2174.0	30.0	25.4	Imagenex not working	
99/09/16 17:36:50.00	391563.5	4946880.8	2174.2	28.3	21.8	Imagenex coming back. whoo hooo	
99/09/16 17:45:44.00	391638.3	4946952.6	2174.1	30.0	24.4	We are imagenexing again, on our way to line 13	
99/09/16 17:45:58.00	391649.2	4946964.4	2174.2	30.0	24.6	small boat on board with floats and extensometer	

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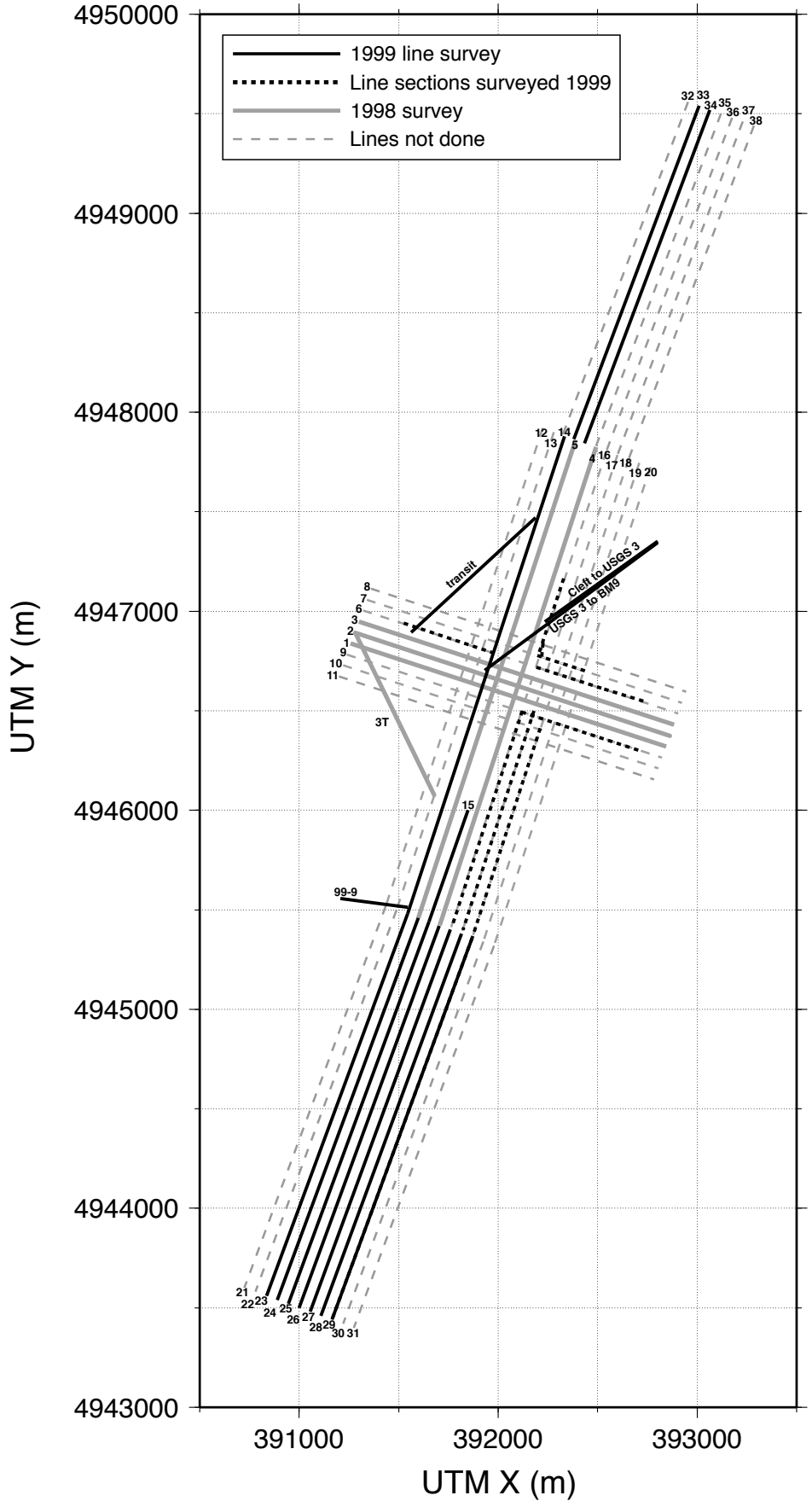
99/09/16 18:44:42.00	392189.8	4947457.7	2188.5	27.7	360.0	End of transit imagenex line (from BM12 to Imgnx 13)
99/09/16 18:45:05.00	392190.9	4947460.2	2188.4	27.7	0.2	SOL 13, heading north
99/09/16 19:16:11.00	392340.6	4947873.9	2192.9	23.9	0.3	NOTE: IMAGENEX LINE 13 IS ACTUALLY LINE 14!!!!
99/09/16 19:17:19.00	392345.8	4947883.4	2193.0	24.1	9.2	EOL 14, SOL 32
99/09/16 19:27:01.00	392412.4	4948005.2	2193.0	25.1	1.3	Veering over to line 33
99/09/16 19:30:48.00	392437.5	4948043.9	2193.0	26.8	346.9	SOL 33
99/09/16 20:35:07.00	392804.9	4948896.5	2192.1	30.0	112.5	There is a winch problem...it won't go into auto.
99/09/16 20:35:32.00	392774.9	4948893.8	2188.0	30.0	103.0	We are off the line to the east, may not be able to recover
99/09/16 20:38:00.00	392789.2	4948916.5	2176.0	30.0	191.4	Our altitude is too high; imagenex dropping out
99/09/16 20:41:45.00	392795.8	4948961.9	2190.5	30.0	197.0	Imagenex coming back in as we go down
99/09/16 20:43:46.00	392812.5	4949001.2	2199.7	23.8	26.3	Back down to 25 m altitude
99/09/16 21:42:24.00	393009.5	4949537.8	2203.8	25.6	11.7	EOL 33
99/09/16 21:51:51.00	393060.4	4949523.2	2204.9	25.0	113.2	SOL 34
99/09/17 00:05:17.00	392430.3	4947840.7	2195.8	22.8	190.0	EOL34
99/09/17 00:06:38.00	392435.3	4947841.1	2195.5	23.5	160.0	turning E, to head south on Line 16
99/09/17 00:31:06.00	392543.8	4947705.6	2190.4	28.1	141.0	Cancel that Line 16
99/09/17 00:31:14.00	392544.9	4947700.7	2188.4	30.0	140.7	End of Dive 268
99/09/17 00:55:17.00	392501.7	4947926.7	1716.4	30.0	175.1	No more Jason dives, heading back north to Axial
99/09/17 02:22:04.00	392442.6	4949432.7	51.2	30.0	180.6	50m depth
99/09/17 02:25:18.00	392579.1	4949524.2	-0.2	30.0	180.9	Medea on surface
99/09/17 02:25:21.00	392579.1	4949524.2	0.0	30.0	183.1	Jason on surface
99/09/17 02:26:27.00	392579.1	4949524.2	0.0	30.0	169.4	Medea on deck
99/09/17 02:30:40.00	392579.1	4949524.2	-0.6	30.0	192.3	power down
99/09/17 02:31:07.00	392579.1	4949524.2	-0.6	30.0	192.3	Jason on deck

IMAGENEX SONAR SURVEYS

CLEFT98/99 IMAGENEX LINES STATUS

Imgx Line #	1999 alt name	UTM Start X	Start Y	End X	End Y	Year	Dive #
CLEFT							
1		391259	4946838	392844	4946320	1998	236
2		391281	4946893	392864	4946375	1998	236
3		391301	4946948	392864	4946375	1998	236
4		392492	4947826	391706	4945422	1998	236
5		392390	4947860	391660	4945460	1998	236
6	99-1/-12	391321	4947003	392905	4946485	1999 (part)	264/265/266
7	99-4/-15	391341	4947058	392925	4946540	1999 (part)	264/266
8		391361	4947113	392945	4946595	N/D	-
9	99-5	391259	4946838	392825	4946265	1999 (part)	265
10	99-11	391220	4946728	392805	4946210	N/D	-
11		391200	4946673	392785	4946155	N/D	-
12		392225	4947920	391435	4945520	N/D	-
13	99-16	392280	4947900	391490	4945500	N/D	-
14	99-3/-10/-13	392335	4947880	391706	4945422	1999	266/268
15	99-7	391848	4946000	391653	4945440	1999	265
16	99-2/-6/-14	392545	4947805	391760	4945400	1999 (part)	265/266
17	99-17	392600	4947785	391815	4945380	1999 (part)	266
18		392655	4947765	391870	4945360	1999 (part)	266
19		392710	4947745	391925	4945340	N/D	-
20		392765	4947725	391980	4945320	N/D	-
21		391435	4945520	390725	4943600	N/D	-
22		391490	4945500	390780	4943580	N/D	-
23		391545	4945480	390835	4943560	1999	266
24		391600	4945460	390890	4943540	1999	266
25		391653	4945440	390945	4943520	1999	266
26		391705	4945420	391000	4943500	1999	266
27		391760	4945400	391055	4943480	1999	266
28		391815	4945380	391110	4943460	1999	266
29		391870	4945360	391165	4943440	1999	266
30		391925	4945340	391220	4943420	N/D	-
31		391980	4945320	391275	4943400	N/D	-
32		392955	4949560	392325	4947885	1999 (sml part)	268
33		393010	4949540	392380	4947865	1999	268
34		393065	4949520	392435	4947845	1999	268
35		393120	4949500	392490	4947825	N/D	-
36		393175	4949480	392545	4947805	N/D	-
37		393230	4949460	392600	4947785	N/D	-
38		393285	4949440	392655	4947765	N/D	-
Transit	99-9	391206	4945539	391548	4945495	1999	266
Clft to USGS 3		392239	4946934	392808	4947340	1999	267
USGS 3 to BM9		392239	4946934	392808	4947340	1999	267

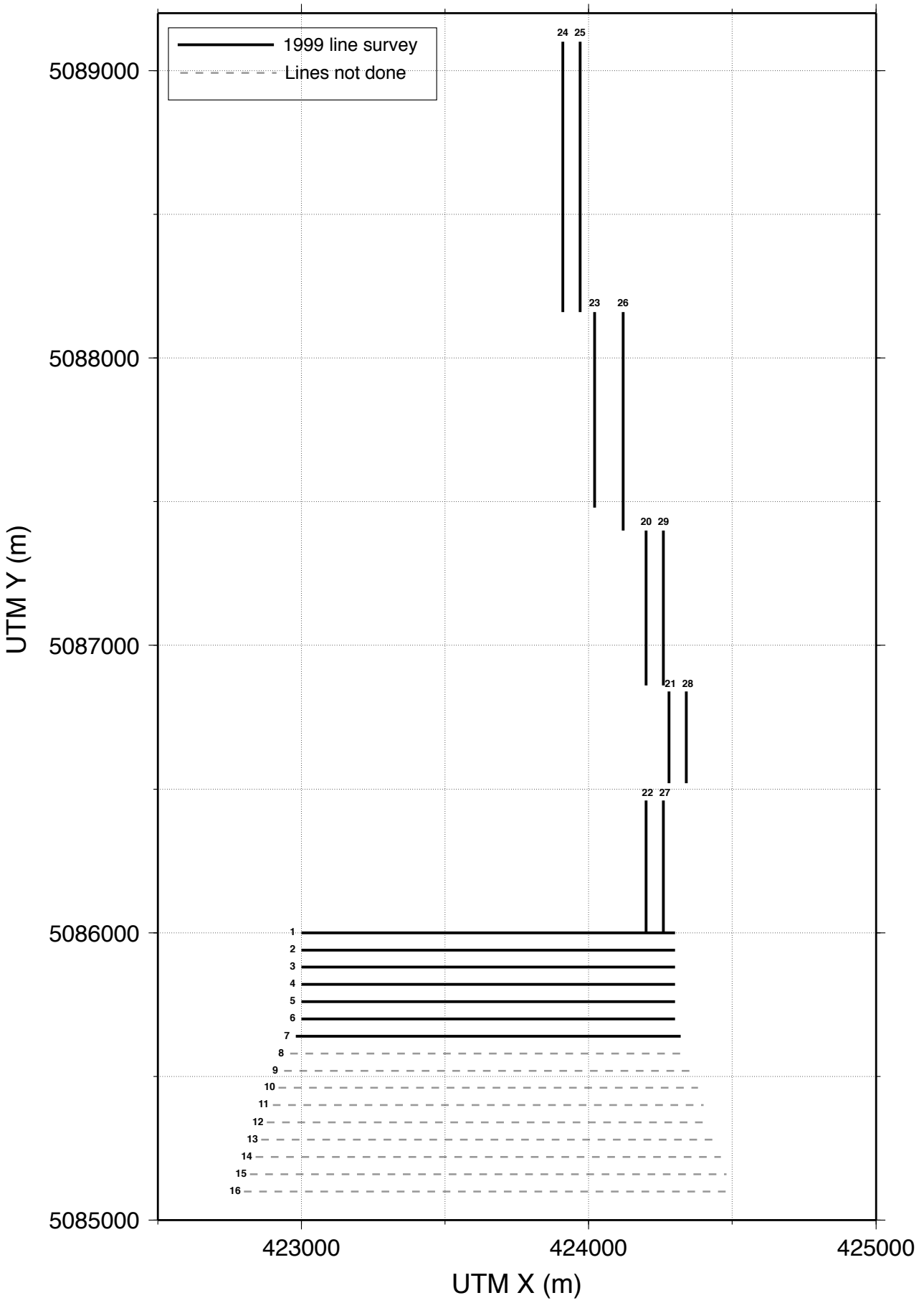
CLEFT98/99 IMAGENEX TRACK LINES AT CLEFT



CLEFT98/99 IMAGENEX LINES STATUS

Imgx Line #	1999 alt name	UTM Start X	Start Y	End X	End Y	Year	Dive #
AXIAL							
1		423000	5086000	424300	5086000	1999	264
2		423000	5085940	424300	5085940	1999	264
3		423000	5085880	424300	5085880	1999	264
4		423000	5085820	424300	5085820	1999	264
5		423000	5085760	424300	5085760	1999	264
6		423000	5085700	424300	5085700	1999	264
7		422980	5085640	424320	5085640	1999	264
8		422960	5085580	424340	5085580	N/D	-
9		422940	5085520	424360	5085520	N/D	-
10		422920	5085460	424380	5085460	N/D	-
11		422900	5085400	424400	5085400	N/D	-
12		422880	5085340	424420	5085340	N/D	-
13		422860	5085280	424440	5085280	N/D	-
14		422840	5085220	424460	5085220	N/D	-
15		422820	5085160	424480	5085160	N/D	-
16		422800	5085100	424500	5085100	N/D	-
20		424200	5087400	424200	5086860	1999	263
21		424280	5086840	424280	5086520	1999	263
22		424200	5086460	424200	5086000	1999	263
23		424020	5088160	424020	5087480	1999	263
24		423910	5089100	423910	5088160	1999	263
25		423970	5089100	423970	5088160	1999	263
26		424120	5088160	424120	5087400	1999	263
27		424260	5086460	424260	5086000	1999	263
28		424340	5086840	424340	5086520	1999	263
29		424260	5087400	424260	5086860	1999	263

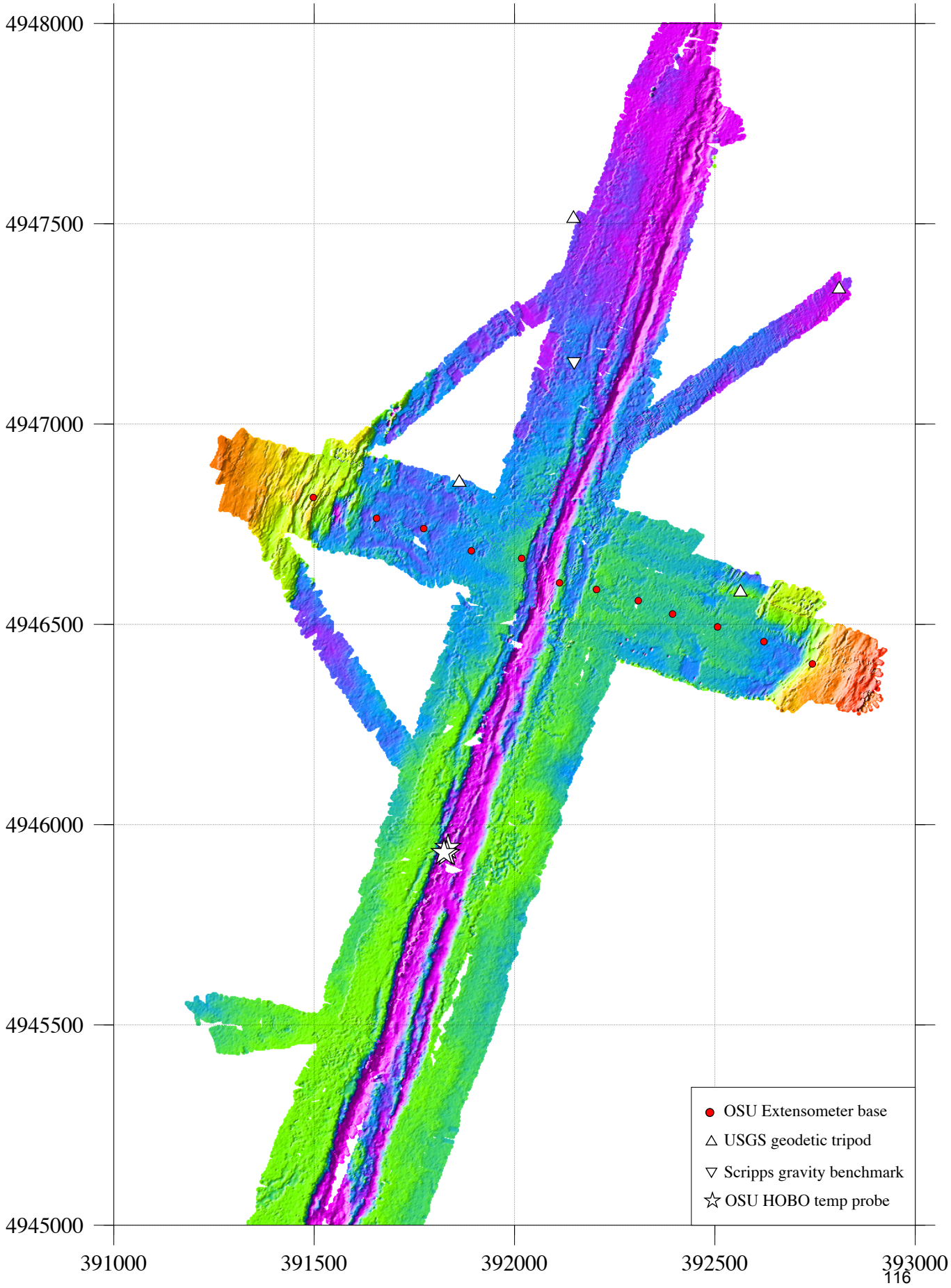
CLEFT99 IMAGENEX TRACK LINES AT AXIAL

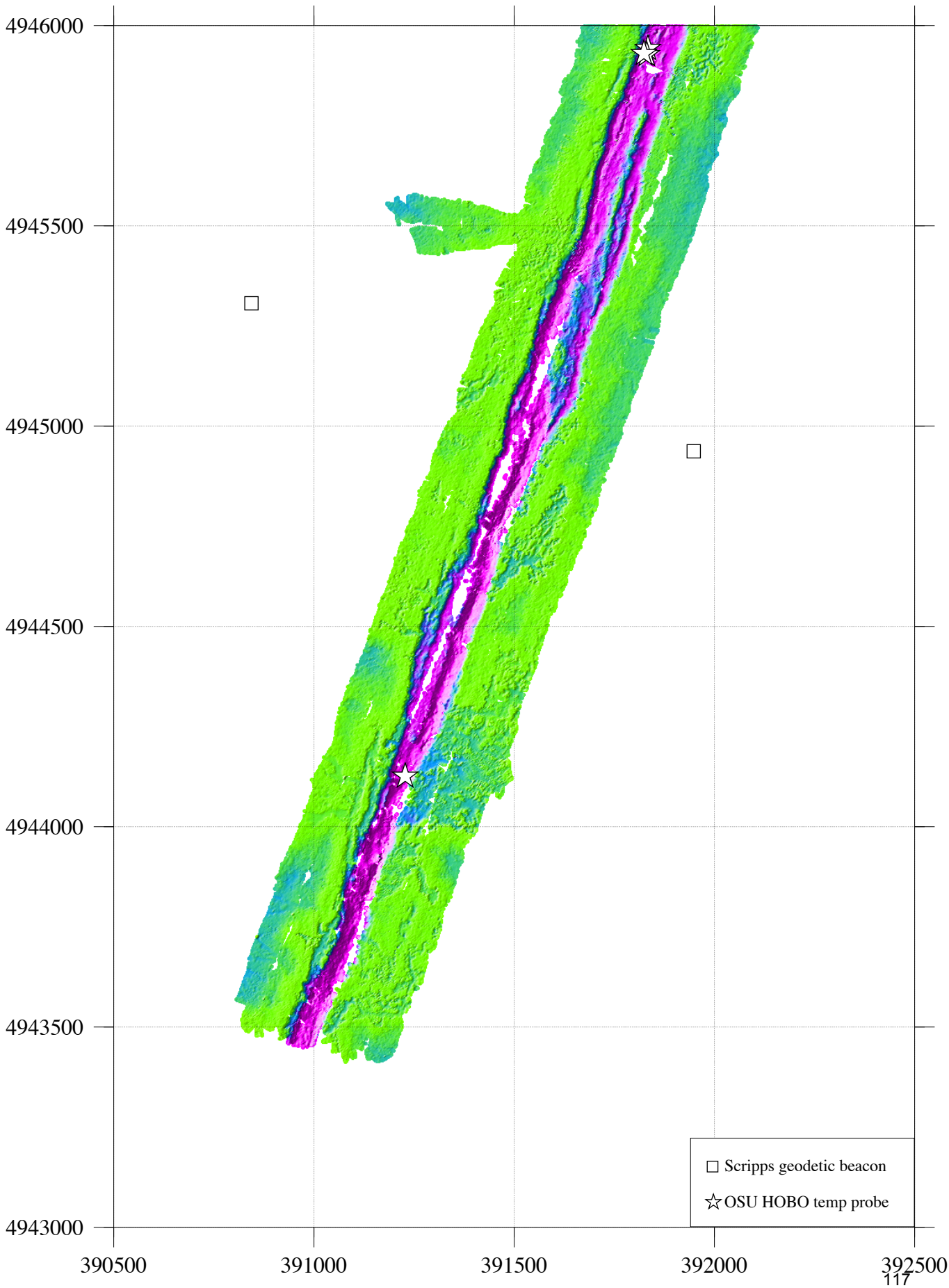


CLEFT98/99 IMAGENEX SURVEY TIMES

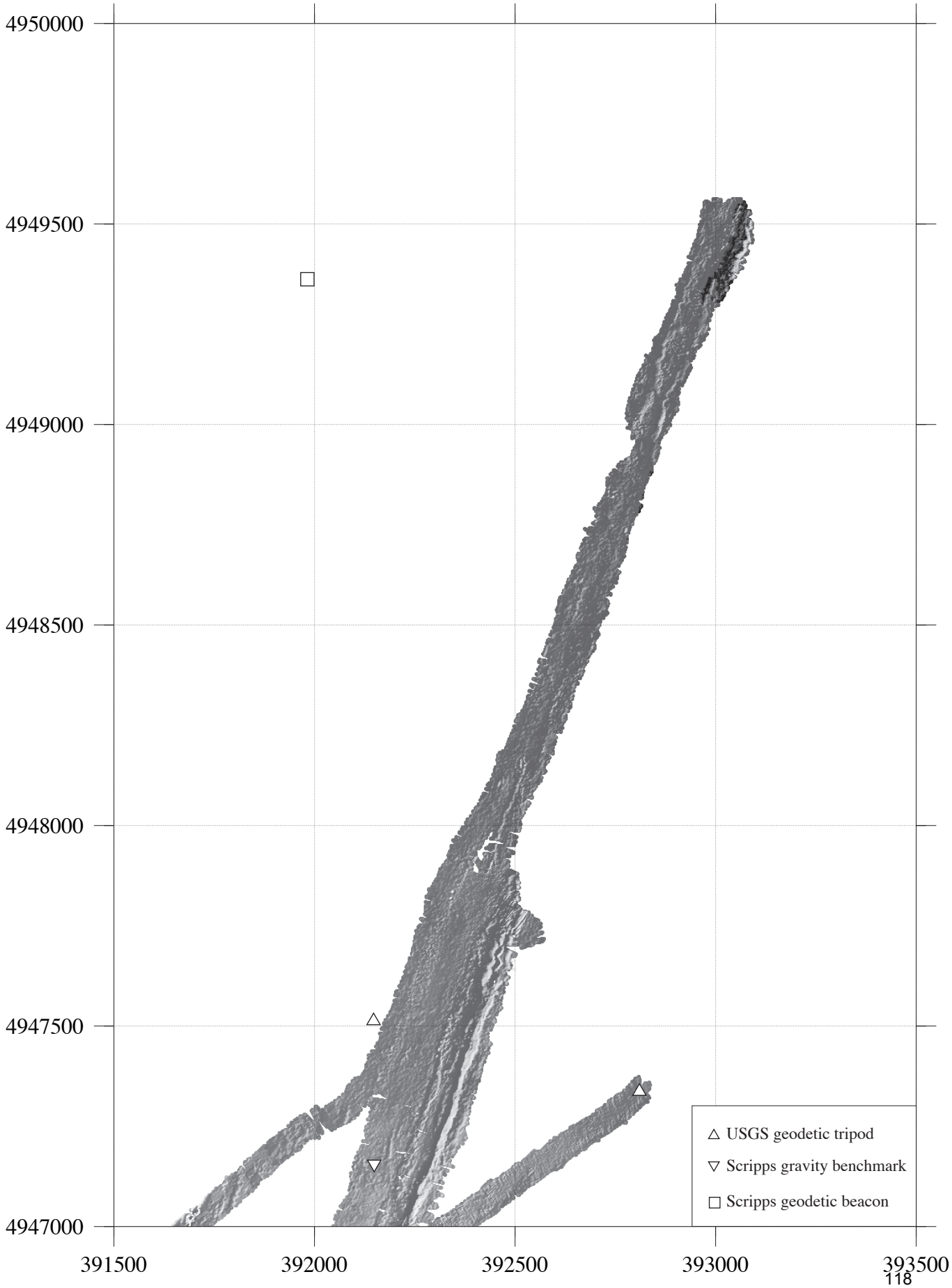
Imgx Line #	Alt Name	Date	JD	Start	End	Total time	Total time (hr)	TT/dive
CLEFT98								
JAS236 - Cleft								
1		8/17 to 18	229-30	22:08	2:05	4:03	4.050	
2				2:33	6:24	3:51	3.850	
3				6:36	10:23	3:47	3.783	
3TA				13:23	14:32	1:09	1.150	
3TB				17:24	18:20	0:56	0.933	
4				18:20	21:51	3:31	3.517	
5		8/18 to 19	230-31	22:17	1:11	2:54	2.900	**20.183**
CLEFT99								
JAS263 - Axial								
23		9/9	252	4:20	5:20	1:00	1.000	
24				5:38	6:46	1:08	1.133	
25				7:00	8:15	1:15	1.250	
26				8:36	9:38	1:02	1.033	
20				9:54	10:36	0:42	0.700	
21				10:56	11:17	0:21	0.350	
22				11:31	12:12	0:41	0.683	
27				12:35	13:28	0:53	0.883	
28				13:41	14:26	0:45	0.750	
29				14:36	15:02	0:26	0.433	**8.217**
JAS264 - Axial								
1		9/10	253	2:42	4:11	1:29	1.483	
2				4:31	5:04	0:33	0.550	
				5:10	6:19	1:09	1.150	
3				6:26	7:56	1:30	1.500	
4				8:10	9:41	1:31	1.517	
5				9:48	11:30	1:42	1.700	
6				11:39	13:12	1:33	1.550	
7				13:34	15:27	1:53	1.883	**11.333**
JAS265 - Cleft								
6	99-1a	9/11	254	9:38	10:08	0:30	0.500	
	99-1b			12:48	13:29	0:25	0.417	
16	99-2			13:33	13:48	0:35	0.583	
Transit				13:48	14:20	0:22	0.367	
9	99-5			17:42	18:33	0:51	0.850	
16	99-6			18:33	20:04	1:31	1.517	
15	99-7			20:20	21:04	0:44	0.733	**4.967**
JAS266 - Cleft								
6	99-12	9/13	256	5:04	5:44	0:40	0.667	
14	99-13			8:39	9:36	0:57	0.950	
16	99-14			15:20	15:58	0:38	0.633	
7	99-15			16:00	16:28	0:28	0.467	
14	99-10			19:47	21:15	0:28	0.467	
Transit	99-9			21:15	21:54	0:39	0.650	
23		9/14	257	1:52	4:20	2:28	2.467	
24				4:35	7:01	2:26	2.433	
25				7:18	9:47	2:29	2.483	
26				10:06	12:43	2:37	2.617	
27				12:59	15:31	2:32	2.533	
28				15:45	18:50	3:05	3.083	
17				18:50	20:07	1:17	1.283	
18				20:27	21:21	0:54	0.900	
29		9/14 to 9/15	257-58	21:25	0:11	2:46	2.767	**24.400**
JAS267 - Cleft								
Cleft to USGS 3		9/15	258	17:04	17:57	0:53	0.833	
USGS 3 to BM9				18:38	20:00	1:22	1.367	**2.200**
JAS268 - Cleft								
Transit		9/16	259	17:36	18:44	1:08	1.167	
14				18:46	19:17	0:31	0.517	
32	part			19:17	19:27	0:10	0.167	
33				19:30	21:42	2:12	2.250	
34		9/16 to 17	259-60	21:51	0:05	2:14	2.233	**6.333**
1999 TOTAL								**57.450**

Imagenex coverage - Vent1 site - with extensometer deployment sites




Imagenex coverage - Plume site
4946000
4945500
4945000
4944500
4944000
4943500
4943000
390500
391000
391500
392000
392500
Scripps geodetic beacon
OSU HOBO temp probe

Imagenex coverage - Vent3 site



DATA TABLES

CLEFT98/99 TRANSPONDER LOCATIONS

Transponder	Latitude (°/')	Longitude (°/')	UTM X	UTM Y	Depth (m)
AXIAL					
9.5	45 55.49364	129 59.97892	422490.35	5086188.55	1324.7
10.5	46 54.55396	129 58.62275	424221.58	5084426.79	1340.4
11.0	45 56.47998	129 59.94527	422556.72	5088014.47	1330.9
11.5	45 56.04178	129 58.60114	424283.25	5087181.51	1305.4
CLEFT					
8.5	44 41.37830	130 19.83128	394569.87	4949335.07	1919.9
9.5	44 40.26972	130 20.45012	393718.81	4947296.1	1908.3
10.0	44 38.18189	130 21.33007	392492.04	4943450.03	1947.2
10.5	44 39.30990	130 20.91876	393070.28	4945529.36	1934.8
11.5	44 40.44089	130 22.43046	391107.96	49476546.57	1919.4
12.5	44 37.15031	130 21.93730	391657.37	4941553.62	2010.4

CLEFT99 BENCHMARK AND TARGET LOCATIONS

Benchmark	UTM X	UTM Y	Latitude	Longitude	Depth
CLEFT					
#1	392744	4946401	44 39.778	130 21.177	2197
#2	392622	4946457	44 39.807	130 21.270	2215
#3	392507	4946494	44 39.826	130 21.357	2213
#4	392395	4946526	44 39.842	130 21.442	2214
#5	392309	4946559	44 39.859	130 21.508	2213
#6	392205	4946587	44 39.879	130 21.587	2212
#7	392113	4946604	44 39.882	130 21.657	2213
#8	392018	4946665	44 39.914	130 21.729	2211
#9	391892	4946684	44 39.923	130 21.825	2215
#10	391774	4946739	44 39.952	130 21.915	2216
#11	391656	4946765	44 39.965	130 22.004	2216
#12	391498	4946817	44 39.991	130 22.125	2197
SIO-7	392149	4947156	44 40.180	130 21.636	2217
USGS tripod #1	392564	4946580	44 39.873	130 21.315	2212
USGS tripod #2	391862	4946854	44 40.015	130 21.850	2220
USGS tripod #3	392810	4947337	44 40.284	130 21.138	2216
USGS tripod #4	392147	4947513	44 40.373	130 21.642	2218
AXIAL					
Digital Camera	423902	5087373	45 56.143	129 58.898	1519
NeMO Buoy	423770	5087351	45 56.130	129 59.000	-

CLEFT 98/99 HOBO LOCATIONS

HOBO	Location	Deployed	Latitude (°/')	Longitude (°/')	UTM X	UTM Y	Hdg (gyro/mag)	JASON Depth (m)	Alt (m)	Comments
CLEFT - VENT 1										
136	Twin chimney/M12	8/18/98 15:47	44 39.522	130 21.859	391834	4945943	314/330	2208	1 to 4	Unable to locate
133	284deg chimney	17:19	44 39.514	130 21.861	391831	4945927	315/323	2209	10 to 12	Unable to recover
134	Near HOBO 133, in 284deg chimney	9/12/99 0:39	44 39.515	130 21.867	391824	4945930	22.6	2208	10.7	
CLEFT - PLUME										
137	At top of beehive chimney	9/15/99 3:11	44 38.536	130 22.295	391228	4944126	21.4	2227	2.6	

CLEFT99 BENCHMARK PRESSURE MEASUREMENTS

Benchmark	Start	End	Dive #
#4	4:14	4:25	265
#3	6:11	6:23	265
#2	7:38	7:49	265
#1	8:58	9:16	265
USGS tripod #1	11:55	12:07	265
#4	14:58	15:08	265
#9	19:38	19:48	266
#10	21:27	21:38	266
#11	23:17	23:27	266
#12	3:34	3:44	266
USGS tripod #4	9:58	10:12	266
SIO-7	14:21	14:31	266
#4	17:03	17:15	266
#9	19:12	19:22	266
#9	13:37	13:47	267
USGS tripod #2	14:42	14:52	267
#9	15:27	15:37	267
USGS tripod #3	18:18	18:28	267
#9	20:20	20:30	267
#8	4:02	4:12	268
#6	10:16	10:26	268
#5	11:18	11:28	268
#4	11:48	12:02	268
#7	15:23	15:33	268
#8	15:55	16:05	268

JASON Hi8 Video Tape List

Tape Id	Start Date/Time	End Data/Time	Data Level	Lowering	Deck	VidSrc	Site	Comments
Hi8-001-W	9/8/99 22:45	9/9/99 0:36	Working	JAS-263	1	1Chp/P&T	Axial	working around NOAA camera
Hi8-001-A	9/8/99 22:45	9/9/99 0:36	Archive	JAS-263	3	1Chp/P&T	Axial	working around NOAA camera
Hi8-002-W	9/8/99 22:45	9/9/99 0:36	Working	JAS-263	2	1Chp/BRW	Axial	working around NOAA camera
Hi8-002-A	9/8/99 22:45	9/9/99 0:36	Archive	JAS-263	4	1Chp/BRW	Axial	working around NOAA camera
Hi8-003-W	9/9/99 0.36	9/9/99 2:20	Working	JAS-263	1	1Chp/P&T	Axial	working around NOAA camera
Hi8-003-A	9/9/99 0:36	9/9/99 2:20	Archive	JAS-263	3	1Chp/P&T	Axial	working around NOAA camera
Hi8-004-W	9/9/99 0:36	9/9/99 2:20	Working	JAS-263	2	1Chp/BRW	Axial	working around NOAA camera
Hi8-004-A	9/9/99 0:36	9/9/99 2.20	Archive	JAS-263	4	1Chp/BRW	Axial	working around NOAA camera
Hi8-005-W	9/9/99 2:20	9/9/99 4:20	Working	JAS-263	1	1Chp/P&T	Axial	working around NOAA camera
Hi8-005-A	9/9/99 2:20	9/9/99 4:20	Archive	JAS-263	3	1Chp/P&T	Axial	working around NOAA camera
Hi8-006-W	9/9/99 2:20	9/9/99 4:20	Working	JAS-263	2	1Chp/BRW	Axial	working around NOAA camera
Hi8-006-A	9/9/99 2:20	9/9/99 4:20	Archive	JAS-263	4	1Chp/BRW	Axial	working around NOAA camera
Hi8-007-W	9/11/99 2:45	9/11/99 4:44	Working	JAS-265	1	1Chp/P&T	Cleft	extensometer
Hi8-007-A	9/11/99 2:45	9/11/99 4:45	Archive	JAS-265	3	1Chp/P&T	Cleft	
Hi8-008-W	9/11/99 2:45	9/11/99 4:44	Working	JAS-265	2	1Chp/BRW	Cleft	
Hi8-008-A	9/11/99 2.45	9/11/99 4:45	Archive	JAS-265	4	1Chp/BRW	Cleft	
Hi8-009-W	9/11/99 4:44	9/11/99 6:42	Working	JAS-265	1	1Chp/P&T	Cleft	
Hi8-009-A	9/11/99 4:45	9/11/99 6:44	Archive	JAS-265	3	1Chp/P&T	Cleft	
Hi8-010-W	9/11/99 4:45	9/11/99 6:43	Working	JAS-265	2	1Chp/BRW	Cleft	
Hi8-010-A	9/11/99 4:44	9/11/99 6:45	Archive	JAS-265	4	1Chp/BRW	Cleft	
Hi8-011-W	9/11/99 6:43	9/11/99 8.42	Working	JAS-265	1	1Chp/P&T	Cleft	
Hi8-011-A	9/11/99 6:44	9/11/99 8:42	Archive	JAS-265	3	1Chp/P&T	Cleft	
Hi8-012-W	9/11/99 6:43	9/11/99 8:43	Working	JAS-265	2	1Chp/BRW	Cleft	
Hi8-012-A	9/11/99 6:43	9/11/99 8:42	Archive	JAS-265	4	1Chp/BRW	Cleft	
Hi8-013-W	9/11/99 8:42	9/11/99 11:10	Working	JAS-265	1	1Chp/P&T	Cleft	tape stopped @ 0938, off bottom for imagenex
Hi8-013-A	9/11/99 8:43	9/11/99 11:10	Archive	JAS-265	3	1Chp/P&T	Cleft	tape stopped @ 0938, off bottom for imagenex
Hi8-014-W	9/11/99 8:42	9/11/99 11:10	Working	JAS-265	2	1Chp/BRW	Cleft	tape stopped @ 0938, off bottom for imagenex
Hi8-014-A	9/11/99 8:43	9/11/99 11:10	Archive	JAS-265	4	1Chp/BRW	Cleft	tape stopped @ 0938, off bottom for imagenex
Hi8-015-W	9/11/99 11:11	9/11/99 14:41	Working	JAS-265	1	1Chp/P&T	Cleft	tape stopped @ 12:45 on @ 14:28
Hi8-015-A	9/11/99 11:11	9/11/99 14:41	Archive	JAS-265	3	1Chp/P&T	Cleft	tape stopped @ 12:45 on @ 14:28
Hi8-016-W	9/11/99 11.11	9/11/99 14:41	Working	JAS-265	2	1Chp/BRW	Cleft	tape stopped @ 12:45 on @ 14:28
Hi8-016-A	9/11/99 11.11	9/11/99 14:41	Archive	JAS-265	4	1Chp/BRW	Cleft	tape stopped @ 12:45 on @ 14:28
Hi8-017-W	9/11/99 14:42	9/11/99 16:47	Working	JAS-265	1	1Chp/P&T	Cleft	
Hi8-017-A	9/11/99 14:42	9/11/99 16:47	Archive	JAS-265	3	1Chp/P&T	Cleft	
Hi8-018-W	9/11/99 14:42	9/11/99 16:47	Working	JAS-265	2	1Chp/BRW	Cleft	
Hi8-018-A	9/11/99 14:42	9/11/99 16:47	Archive	JAS-265	4	1Chp/BRW	Cleft	
Hi8-019-W	9/11/99 21:05	9/11/99 23:03	Working	JAS-265	1	1Chp/P&T	Cleft	
Hi8-019-A	9/11/99 21:05	9/11/99 23:03	Archive	JAS-265	3	1Chp/P&T	Cleft	
Hi8-020-W	9/11/99 21.05	9/11/99 23:03	Working	JAS-265	2	1Chp/BRW	Cleft	
Hi8-020-A	9/11/99 21:05	9/11/99 23.03	Archive	JAS-265	4	1Chp/BRW	Cleft	
Hi8-021-W	9/11/99 23:04	9/12/99 1:02	Working	JAS-265	1	1Chp/P&T	Cleft	end of lowering
Hi8-021-A	9/11/99 23:04	9/12/99 1:02	Archive	JAS-265	3	1Chp/P&T	Cleft	end of lowering
Hi8-022-W	9/11/99 23.04	9/12/99 1:02	Working	JAS-265	2	1Chp/BRW	Cleft	end of lowering
Hi8-022-A	9/11/99 23:04	9/12/99 1:02	Archive	JAS-265	4	1Chp/BRW	Cleft	end of lowering
Hi8-023-W	9/12/99 1:03	9/12/99 1:33	Working	JAS-265	1	1Chp/P&T	Cleft	
Hi8-023-A	9/12/99 1:03	9/12/99 1:33	Archive	JAS-265	3	1Chp/P&T	Cleft	
Hi8-024-W	9/12/99 1:03	9/12/99 1:33	Working	JAS-265	2	1Chp/BRW	Cleft	
Hi8-024-A	9/12/99 1:03	9/12/99 1:33	Archive	JAS-265	4	1Chp/BRW	Cleft	
Hi8-025-W	9/12/99 18:44	9/12/99 20:42	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-025-A	9/12/99 18:44	9/12/99 20:42	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-026-W	9/12/99 18:44	9/12/99 20:42	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-026-A	9/12/99 18:44	9/12/99 20:42	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-027-W	9/12/99 20.42	9/12/99 22:42	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-027-A	9/12/99 20:42	9/12/99 22:42	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-028-W	9/12/99 20:42	9/12/99 22:42	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-028-A	9/12/99 20:42	9/12/99 22:42	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-029-W	9/12/99 22:42	9/13/99 0:44	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-029-A	9/12/99 22:42	9/13/99 0:44	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-030-W	9/12/99 22:42	9/13/99 0:44	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-030-A	9/12/99 22:42	9/13/99 0:44	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-031-W	9/13/99 0:44	9/13/99 2:40	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-031-A	9/13/99 0:44	9/13/99 2:40	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-032-W	9/13/99 0:44	9/13/99 2:40	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-032-A	9/13/99 0:44	9/13/99 2:40	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-033-W	9/13/99 2:44	9/13/99 6:15	Working	JAS-266	1	1Chp/P&T	Cleft	stopped @4:14, restarted @05:52
Hi8-033-A	9/13/99 2.44	9/13/99 6:15	Archive	JAS-266	3	1Chp/P&T	Cleft	stopped @4:14, restarted @05:52
Hi8-034-W	9/13/99 2:44	9/13/99 6.15	Working	JAS-266	2	1Chp/BRW	Cleft	stopped @4:14, restarted @05:52
Hi8-034-A	9/13/99 2:44	9/13/99 6:15	Archive	JAS-266	4	1Chp/BRW	Cleft	stopped @4:14, restarted @05:52
Hi8-035-W	9/13/99 6:17	9/13/99 8:18	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-035-A	9/13/99 6:17	9/13/99 8:18	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-036-W	9/13/99 6:17	9/13/99 8:18	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-036-A	9/13/99 6:17	9/13/99 8:18	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-037-W	9/13/99 8:18	9/13/99 11:19	Working	JAS-266	1	1Chp/P&T	Cleft	

JASON Hi8 Video Tape List

Tape Id	Start Date/Time	End Data/Time	Data Level	Lowering	Deck	VidSrc	Site	Comments
Hi8-037-A	9/13/99 8:18	9/13/99 11:19	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-038-W	9/13/99 8:18	9/13/99 11:19	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-038-A	9/13/99 8:18	9/13/99 11:19	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-039-W	9/13/99 11:19	9/13/99 13:18	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-039-A	9/13/99 11:19	9/13/99 13:18	Archive	JAS-266	3	1Chp/P&T	Cleft	tape jammed at eject
Hi8-040-W	9/13/99 11:19	9/13/99 13:18	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-040-A	9/13/99 11:19	9/13/99 13:18	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-041-W	9/13/99 13:18	9/13/99 13:44	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-041-A			Archive	JAS-266	3	1Chp/P&T	Cleft	blank due to deck problems
Hi8-042-W	9/13/99 13:18	9/13/99 13:44	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-042-A	9/13/99 13:18	9/13/99 13:44	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-043-W	9/13/99 13:44	9/13/99 17:11	Working	JAS-266	1	1Chp/P&T	Cleft	stopped @1552 for imagenex, startd 16:50
Hi8-043-A	9/13/99 13:44	9/13/99 17:11	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-044-W	9/13/99 13:44	9/13/99 17:11	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-044-A	9/13/99 13:44	9/13/99 17:11	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-045-W	9/13/99 17:12	9/13/99 22:35	Working	JAS-266	1	1Chp/P&T	Cleft	video stopped at 17:25
Hi8-045-A	9/13/99 17:12	9/13/99 22:35	Archive	JAS-266	3	1Chp/P&T	Cleft	restarted @18:46
Hi8-046-W	9/13/99 17:12	9/13/99 22:35	Working	JAS-266	2	1Chp/BRW	Cleft	stopped @ 19:54
Hi8-046-A	9/13/99 17:12	9/13/99 22:35	Archive	JAS-266	4	1Chp/BRW	Cleft	started @ 21:56
Hi8-047-W	9/13/99 22:35	9/14/99 0:51	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-047-A	9/13/99 22:35	9/14/99 0:51	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-048-W	9/13/99 22:35	9/14/99 0:51	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-048-A	9/13/99 22:35	9/14/99 0:51	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-049-W	9/14/99 0:51	9/14/99 1:16	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-049-A	9/14/99 0:51	9/14/99 1:16	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-050-W	9/14/99 0:51	9/14/99 1:16	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-050-A	9/14/99 0:51	9/14/99 1:16	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-051-W	9/15/99 1:07	9/15/99 3:01	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-051-A	9/15/99 1:07	9/15/99 3:01	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-052-W	9/15/99 1:07	9/15/99 3:01	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-052-A	9/15/99 1:07	9/15/99 3:01	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-053-W	9/15/99 3:05	9/15/99 3:23	Working	JAS-266	1	1Chp/P&T	Cleft	
Hi8-053-A	9/15/99 3:05	9/15/99 3:23	Archive	JAS-266	3	1Chp/P&T	Cleft	
Hi8-054-W	9/15/99 3:05	9/15/99 3:23	Working	JAS-266	2	1Chp/BRW	Cleft	
Hi8-054-A	9/15/99 3:05	9/15/99 3:23	Archive	JAS-266	4	1Chp/BRW	Cleft	
Hi8-055-W	9/15/99 9:11	9/15/99 11:00	Working	JAS-267	1	1Chp/P&T	Cleft	
Hi8-055-A	9/15/99 9:11	9/15/99 11:00	Archive	JAS-267	3	1Chp/P&T	Cleft	
Hi8-056-W	9/15/99 9:11	9/15/99 11:00	Working	JAS-267	2	1Chp/BRW	Cleft	
Hi8-056-A	9/15/99 9:11	9/15/99 11:00	Archive	JAS-267	4	1Chp/BRW	Cleft	
Hi8-057-W	9/15/99 11:00	9/15/99 13:04	Working	JAS-267	1	1Chp/P&T	Cleft	
Hi8-057-A	9/15/99 11:00	9/15/99 13:04	Archive	JAS-267	3	1Chp/P&T	Cleft	
Hi8-058-W	9/15/99 11:00	9/15/99 13:04	Working	JAS-267	2	1Chp/BRW	Cleft	
Hi8-058-A	9/15/99 11:00	9/15/99 13:04	Archive	JAS-267	4	1Chp/BRW	Cleft	
Hi8-059-W	9/15/99 13:04	9/15/99 15:03	Working	JAS-267	1	1Chp/P&T	Cleft	
Hi8-059-A	9/15/99 13:04	9/15/99 15:03	Archive	JAS-267	3	1Chp/P&T	Cleft	
Hi8-060-W	9/15/99 13:04	9/15/99 15:03	Working	JAS-267	2	1Chp/BRW	Cleft	
Hi8-060-A	9/15/99 13:04	9/15/99 15:03	Archive	JAS-267	4	1Chp/BRW	Cleft	
Hi8-061-W	9/15/99 15:04	9/15/99 18:08	Working	JAS-267	1	1Chp/P&T	Cleft	tapes turned off @1654 for imagenex, 0n at 1759
Hi8-061-A	9/15/99 15:04	9/15/99 18:08	Archive	JAS-267	3	1Chp/P&T	Cleft	
Hi8-062-W	9/15/99 15:04	9/15/99 18:08	Working	JAS-267	2	1Chp/BRW	Cleft	
Hi8-062-A	9/15/99 15:04	9/15/99 18:08	Archive	JAS-267	4	1Chp/BRW	Cleft	
Hi8-063-W	9/15/99 18:09	9/15/99 20:33	Working	JAS-267	1	1Chp/P&T	Cleft	off @1837 for imagenex, on at 2001
Hi8-063-A	9/15/99 18:09	9/15/99 20:33	Archive	JAS-267	3	1Chp/P&T	Cleft	
Hi8-064-W	9/15/99 18:09	9/15/99 20:33	Working	JAS-267	2	1Chp/BRW	Cleft	
Hi8-064-A	9/15/99 18:09	9/15/99 20:33	Archive	JAS-267	4	1Chp/BRW	Cleft	
Hi8-065-W	9/16/99 3:19	9/16/99 5:20	Working	JAS-268	1	1Chp/P&T	Cleft	tapes allowed to run out, 0.5 hr gap follows
Hi8-065-A	9/16/99 3.19	9/16/99 5:20	Archive	JAS-268	3	1Chp/P&T	Cleft	
Hi8-066-W	9/16/99 3:19	9/16/99 5:20	Working	JAS-268	2	1Chp/BRW	Cleft	
Hi8-066-A	9/16/99 3:19	9/16/99 5:20	Archive	JAS-268	4	1Chp/BRW	Cleft	
Hi8-067-W	9/16/99 5:49	9/16/99 8 01	Working	JAS-268	1	1Chp/P&T	Cleft	
Hi8-067-A	9/16/99 5:49	9/16/99 8:01	Archive	JAS-268	3	1Chp/P&T	Cleft	
Hi8-068-W	9/16/99 5:49	9/16/99 8:01	Working	JAS-268	2	1Chp/BRW	Cleft	
Hi8-068-A	9/16/99 5:49	9/16/99 8.01	Archive	JAS-268	4	1Chp/BRW	Cleft	
Hi8-069-W	9/16/99 8:01	9/16/99 10:01	Working	JAS-268	1	1Chp/P&T	Cleft	
Hi8-069-A	9/16/99 8:01	9/16/99 10:01	Archive	JAS-268	3	1Chp/P&T	Cleft	
Hi8-070-W	9/16/99 8:01	9/16/99 10:01	Working	JAS-268	2	1Chp/BRW	Cleft	
Hi8-070-A	9/16/99 8:01	9/16/99 10:01	Archive	JAS-268	4	1Chp/BRW	Cleft	
Hi8-071-W	9/16/99 10:01	9/16/99 12:02	Working	JAS-268	1	1Chp/P&T	Cleft	
Hi8-071-A	9/16/99 10:01	9/16/99 12.02	Archive	JAS-268	3	1Chp/P&T	Cleft	
Hi8-072-W	9/16/99 10:01	9/16/99 12:02	Working	JAS-268	2	1Chp/BRW	Cleft	
Hi8-072-A	9/16/99 10:01	9/16/99 12:02	Archive	JAS-268	4	1Chp/BRW	Cleft	
Hi8-073-W	9/16/99 12:02	9/16/99 13:58	Working	JAS-268	1	1Chp/P&T	Cleft	
Hi8-073-A	9/16/99 12:02	9/16/99 13:58	Archive	JAS-268	3	1Chp/P&T	Cleft	

JASON Hi8 Video Tape List

Tape Id	Start Date/Time	End Data/Time	Data Level	Lowering	Deck	VidSrc	Site	Comments
Hi8-074-W	9/16/99 12:02	9/16/99 13:58	Working	JAS-268	2	1Chp/BRW	Cleft	
Hi8-074-A	9/16/99 12:02	9/16/99 13:58	Archive	JAS-268	4	1Chp/BRW	Cleft	
Hi8-075-W	9/16/99 13:58	9/16/99 15:44	Working	JAS-268	1	1Chp/P&T	Cleft	
Hi8-075-A	9/16/99 13:58	9/16/99 15:44	Archive	JAS-268	3	1Chp/P&T	Cleft	
Hi8-076-W	9/16/99 13:58	9/16/99 15:44	Working	JAS-268	2	1Chp/BRW	Cleft	
Hi8-076-A	9/16/99 13:58	9/16/99 15:44	Archive	JAS-268	4	1Chp/BRW	Cleft	
Hi8-077-W	9/16/99 15:45	9/16/99 17:27	Working	JAS-268	1	1Chp/P&T	Cleft	
Hi8-077-A	9/16/99 15:45	9/16/99 17:27	Archive	JAS-268	3	1Chp/P&T	Cleft	
Hi8-078-W	9/16/99 15:45	9/16/99 17:27	Working	JAS-268	2	1Chp/BRW	Cleft	
Hi8-078-A	9/16/99 15:45	9/16/99 17 27	Archive	JAS-268	4	1Chp/BRW	Cleft	

JASON Sensor Measurements

Lowering: JAS-263
Date: 9/9/99

Vehicle origin is forward bolt, bottom of "tether strain relief"

Sensor	X	Y	Z	Pitch	Roll	Yaw	Comments
ESC	0.00	0.00	0.00	0.0	0.0		*Not on vehicle*
3Chip	0.00	0.00	0.00				*Not on vehicle*
IMA	-10.00	3.00	17.38 0.44	-4.5	0.40		
LBL	87.75	-14.00	-40.75				
Exact	0.00	0.00	0.00				*Not on vehicle*
Paro	44.00	22.00	18.75 0.48				
Altimeter	61.00	-14.50	36.25				
SM2000/Imaging	86.50	6.50	-31.50				
SM2000/Profiling	90.75	6.50	-27.50				
DOP	75.00	1.00	36.25				
RLG	0.00	0.00	0.00				*Not on vehicle*
SBP	0.00	0.00	0.00				*Not on vehicle*
Sonardyne	0.00	0.00	0.00				*Not on vehicle*

Vehicle Tilts	Pitch	Roll
JASON sensor values	0.7	3.5
Protractor/Level values	.4->.5	0.9->1.0
CLEFT 99 ROV Laser separation	2.5	

Measured With Respect to a Ref. Point

Sensor	X	Y	Z	Ref. Point
ESC	0.00	0.00	0.00	
3Chip	0.00	0.00	0.00	
IMA	-10.00	3.00	17.38	
LBL	11.00	-1.50	-19.00	I
Exact	0.00	0.00	0.00	
Paro	3.50	1.50	-3.50	H
Altimeter	-9.75	6.00	12.00	F
SM2000/Imaging	15.75	27.00	-55.75	F
SM2000/Profiling	20.00	27.00	-51.75	F
DOP	4.25	21.50	12.00	F
RLG	0.00	0.00	0.00	
SBP	0.00	0.00	0.00	
Sonardyne	0.00	0.00	0.00	

Ref. Points With Respect to Tether Strain Relief Bolt

Ref Point	X	Y	Z
A	1.50	-17.75	0.00
B	0.00	-19.25	14.25
C	1.50	17.75	0.00
D	0.00	19.25	14.25
E	40.50	-20.50	22.25
F	70.75	-20.50	24.25
G	70.75	20.50	24.25
H	40.50	20.50	22.25
I	76.75	-12.50	-21.75

DEPTH OFFSET OF IMAGENEX FROM PARO IS +0.04 m (IMAGENEX IS ABOVE PARO)

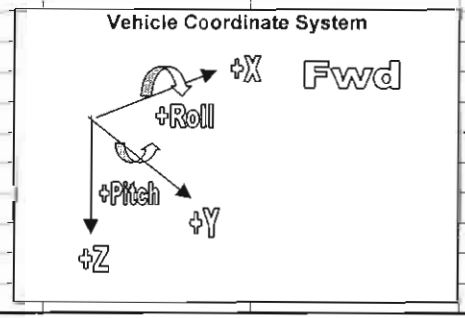
IMAGENEX SONAR WAS FACING AFT

Directions:

1) Measure the coordinatesof the reference points if not already given / specified
2) Then measure the coord. Of each sensor with respect to a reference point
3) For each sensor add up these two and the result will be the coordinates of the sensor with respect to the vehicle coordinate origin

Forward Looking Configuration
All linear measurements in inches
All angular meaurements in degrees

SM2000/Imaging Measure Point: Top of top metal edge along center line
SM2000Profiling Measure Point: Top of top metal edge along center line



JASON Sensor Measurements

CLEFT 98 CRUISE

Lowering: J/.S-236
Date: 8/17/98

Vehicle origin is forward bolt, top of "tether strain relief"

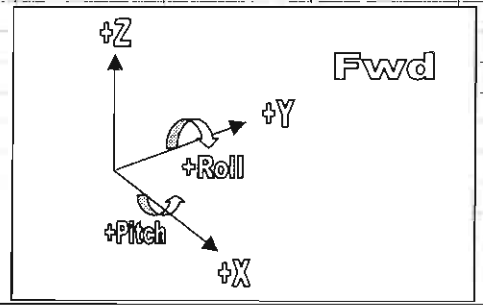
Sensor	X	Y	Z	RX Pitch	RY Roll	RZ Yaw
ESC	0.00	0.00	0.00			
3Chip	0.00	0.00	0.00			
IMA	**0.03**	**0.57**	**-0.83**	**0.00**	**0.70**	**0**
LBL	**-0.04**	**2.16**	**0.57**			
Exact	0.00	0.00	0.00			
Paro	**0.54**	**1.55**	**-0.38**			
Altimeter	**-0.34**	**1.51**	**-0.88**			
SM2000	0.00	0.00	0.00			
DOP	0.00	1.87	-0.86			

Ref Point	X	Y	Z	
A	0.54	0.42	-0.86	
B	0.54	0.40	-0.68	
C	0.54	1.00	-0.68	
D	0.54	1.75	-0.68	
E	0.54	1.80	-0.86	
F	0.10	1.76	-0.68	
G	0.28	2.23	0.35	
Offset point	-0.86	1.49	-1.12	*forward port end of altar*
Conversion	0.03			

Vehicle Tilts	Pitch	Roll
JASON sensor values	0.2	2.9
Level values	0.0	0.7

CLEFT99
-0.5
~~-0.5~~ -3
"final offset" = -2.7

Laser separation
CLEFT98 ROLL 2.2



Forward Looking Configuration
All linear measurements in meters
All angular meaurements in degrees

Comments	Ref Point	Coord relative to Reference Point X	Y	Z
	A	-0.51	0.15	0.04
	G	-0.32	-0.07	0.22
	C	0.00	0.55	0.30
	F	-0.44	-0.25	-0.20
	F	-0.10	0.11	-0.18

Instructions
1) Fill in the Reference Point used and the XYZ coord to the point.

DEPTH OFFSET OF IMAGENEX FROM PARO IS -0.45 m (IMAGENEX IS BELOW PARO)

IMAGENEX SONAR WAS FACING FORWARD

-3 - -0.5 +(-2.7)

-5.2

0125

128