

Eric Kuypers home tel/ 257000  
Escuela de Geología  
Apartado Postal 35  
Ciudad Universitaria  
COSTA RICA

1 APR 77 91/77  
TO 0700Z 93/77

In prnt : Puntarenas, Costa Rica

German Leandro C.  
Esc. de Geología Univ. de Costa Rica  
San José, Costa Rica  
América Central

Information about Austin graduate studies +  
Fellowship / T.A. info

IG-24-3

Chief Scientist log  
Duplicate

93/77

IG-24-3

0700Z

Depart Puntarenas, Costa Rica

shot refraction line to SE from SE end of  
Nicoya peninsula

worked from 1500Z to 1805Z

as end of refraction line ran west to deep

first earthquake OBS.

7 shots on refraction line

2330 (approx) dropped OBS - on station

09-29.0

-85.19.4

94/77

4 Apr 77

0345 Dropped OBS #2 9°43'  
-85°39'

Steam seaward 3 km; disposal of trash, garbage  
then returns to meet OBS site (refraction)

~~Between~~ Between 0600 Z and 1000 Z we have  
looked out several satellites, but always when  
the pass is already half finished before we  
don't get enough dopplers or no fix. We don't  
seem to get any at low freq beginning of pass. Why?

At times it seems that satellite receiver has looked  
out a satellite over center of pass but never gets any  
TL ACO light remains on and receiver no longer scans  
for satellites. No dopplers are received, however.

14082 Dropped 1st refraction OBS 09°54.1' radar  
-85°48.2' range

1440 Dropped 2nd refraction OBS 09-54.5  
85-49.9

~~1440~~ Begin run to end of refraction line

1540 Rough bottom with numerous small (~100-200m deep)  
canyons ⊥ (?) to coast line

### Navigation

we need to find how close program  
is to the last typos on paper type ←

1932 reverse course & begin shooting refraction

2355 Ground recader out

Lost generator earlier today. Plan to abort tomorrow  
after pick up of OBS's & return to Punta Arenas for repairs

95/77

April 5, 1977

0126 resume spaced shots for Manipulator retraction  
Use DCS camera in this Gould recorder

0150 1<sup>st</sup> shot; 10 min intervals thereafter

0310 missed shot; no ready light

0300 No time break or timing lines

0430 last manipulator shot

Lat: 09-42.9 (Br)

Long: -85-37.5

0725 Begin shooting from SE end of line

1100 Complete retraction work, secure magnetometer,  
Manipulator gear.

1230 Hove to for pickup #1 retraction OBS

1348 Recovered #1 retraction OBS

1400 Hove to for #2 pickup

1435 Recovered #2 retraction OBS

Begin transit to drop earthquake OBS #3

1820 ~~2000~~ earthquake OBS drop

84° 38.6' W

9° 23.3' N

96/77

6 APRIL 1977

0030 Secured magnetometer  
 0100 Secured 3.5 + science watch from to  
 anchoring @ Punta Arenas, Costa Rica  
 0130 Anchor in Punta Arenas for generator repair

99/77

9 April

1315 Depart Punta Arenas, Costa Rica. Generator,  
 Corrug engine repaired, IG-24-3B \*

2020 Begin CR-8 off SE extension Micoya Peninsula  
 2nd fold

Dr. Hermanns Leandro on board as guest scientist

Sci Crew

J. Wachman

C.S.

J. Ladd

A.C.S.

G. Latham

G. H. Leandro

Guest Sci.

German

A. Roberts

E.E.

W. Featherston

Airsense

G. Pentman

DFS Tech

B. Rapke

Tech

R. Kerr

Tech

P. Rogers

OBS Tech

G. Pearcy

Cooking Boss

100/77

April 10, 1977

- 0000 - Continue CR-8.  
 0134 - Average speed since 2156 Jax - 4.1 kts  
 End of line @ 0544 DR  
 0530 - ~~SS~~ Tape drive problem  
 0540 - End CR-8 ~~418~~ ~~312°~~, ~~900 rpm~~  
 0550 - CSC 312°, 900 rpm  
 1433 - Drop Eg OBS #4 Stop  
 1436 - Underway 900 rpm  
 1631 - Drop Eg OBS #5 Stop  
 1636 - Underway 900 rpm cc for CR-9  
 2225 - Begin CR-9  
 Choppy seas  
 1444 - Ck 0000 - Area abated; nearing P. Santa Elena  
 2113 - End CR-9

Magnetometer cable wrapped around DFS lead.  
 Untangle, come back on line to start  
 MAS-1. This completes Nicoya reflection work.  
 Come back for one add'l refraction line.  
 4 engines working intermittently. Need more  
 casts. Need 2 acoustic release boards for OBS.

- 0035 - Steady on 310° Prep for MAS-1  
 0050 - Begin MAS-1  
 0411 - Discovered that 4051 responsible for signal (RFI)  
 picked up by sat. nav. Computer off now.  
 hog in tank when computer in use.  
 0836 - Visual of starboard bow we altered course  
 and increased speed to leave her well astern  
 (we had sharp eyes to spot her. Almost  
 approach 1 to 2 miles)  
 0917 - back on course  
 1620 - Port generator ran up to 7250V and  
 wouldn't come down. This is generator  
 repaired last week. Will let cool, then remove  
 off cover and inspect

J.D.  
102April 12<sup>th</sup> 1977 Cont.

Inventory

Sonobuoys - 11

Hercules NCV - 52 boxes + 6 cans ~104 mi

Dugout NCV - 56 boxes

allow 7 cases Hercules for SB + OBS separation

Crossing series of domes this a.m. Oceanographers have drilled 2 of them; say they are shale domes.

sonobuoy #25 over side at 2229

2200 Diodes replaced on generator, back in action. Need heavier duty diodes in Acagutla

103

April 13, 1977

N.B. to Ken Griffiths re HP-25 for onboard time standard?

0730 Auto pilot problems commencing

Excessive ringing in monitor records. Gary will be decided that it must be the earth

- 1) movement in ringing across main traces
- 2) ~~was~~ ringing on for 14 traces
- 3) ringing dies out with time on each shot
- 4) 33 Hz ring not reminiscent of any typical shipboard cycle

airgun firing ~ 300 psi

1600 Galveston - see attached want list  
 Tori wants time & loc. of Neoga explosion  
 300 primers & detonators probably in Acagutla  
 for May port call

DD 103

April 13, 1977

Cont.

2300 - Possible gas seeps

DD 104

0000 - Intermittent leakage on #24.

+ Leandro would like copy of Matthew Caribbean magnetic map.

Gave Leandro copies of all Costa Rican magnetic, bathymetry &amp; navigations - currently on file. Magnetic about one week behind. He will give Saenz Xerox copies.

0300 - Air compressors up - 4 guns on

0500 - Guns most stable; some free running

0600 - 3 guns stable

1320 - Bird sitting on back of large sea turtle. Turtle heard air guns and dove.

1800 - Intermittent low voltage affecting PSC - causing it to be erratic - symptoms. ~~apparent~~ moving fix pulses are flatbed.

2140  
~~2140~~ port generator down again just as we started line MAS-2  
 Earlier in the day we found that the tag line on the inboard starboard engine had parted so at the end of MAS-2 we used a couple of hours hanging in the gun and putting on a new tag line.

we tried one of two single channel streamers with no success.

we started line MAS-3 about 2300Z with 3 air guns. The streamer member on the 4th gun needs rebuilding because it had been chafed. It seems that the two guns on the starboard side became tangled which led to chafing and breaking of tag line on inboard gun.

Apparently the gun became tangled when the ~~inboard~~ outboard gun was brought in and then put out over the inboard gun which was left in the water.

JD  
104

IT IS SUGGESTED THAT IF THE OUTBOARD GUN NEEDS TO BE BROUGHT IN, THE INBOARD GUN SHOULD BE BROUGHT IN FIRST.

15 April 1977

JD 105

0034- Began MA3-3 in fold, 3 guns

0400- Intermittent gun problems. Three operating now.

\* History of coil problems indicates probable difficulty with leg 4. Doubtful that leg 4 can be completed with 2 or more operational coils unless additional coils received from Texas. Quickie port call in Acapulco may be necessary to pick up additional coils.

Fourth gun presently out due to ruptured pressure apt of plate. Coils replace ~~later~~ later today.

24 204

23 00

22 00

Generator failure last night due to diode failure

1450- Need 6 ~~rectifiers~~ rectifiers IN 2135 or equiv  
for ship's generator 60amp, 400V min  
Std mount

Industrial rectifiers  
p 21, Sylvania Catalog.

2 guns - intermittent turn-break problems  
1700 Z Galveston  
No way for exposure in El Salvador  
GVL parents not in Galveston - Karen in Galveston  
2 spare reel - 2 spares in OLS Hight

Shipment to Acapulco

PAA waybill # 026-4029-6760

69 pieces 2300#

Personnel arriving evening April 18.

106

0330 Generator blew again about 3 hrs ago.

0034 Started MAS-4 - Maxipiler 2x good  
0100± Keel cooler leaking badly. Yard in  
Acapulco? Acapulco?

0320 - Deployed SB # 26. Never received up.

0335 - Deployed SB # 27. Good signal but lost after 5 min.

0342 - Deployed # 28. Seems okay. Later. Not a  
super good SB but perhaps adequate

0510 - Deploy # 29 - Good one.

0800 - Deploy # 30 undraining good one

Depth sensors

67 92 65 — 51 56

1200 - Complete MAS-4

1315 - begin 270° turn to Starboard to come into

GUA-1

1415 - Complete turn

1430 - Start GUA-1

1700 SB # 31

17 April 1977

JD

107

0200Z - Rough bottom on much of this line -  
 Begin "smooth" bottom about 0100Z  
 Deploy Sonobuoy #32 - last of ~ 10 min  
 Good prospect for hole -

0221Z - Deploy SB #33

0445Z - SB #33 off

1300 - Begin pulling streamer

xx #24L has leak, partly full salt water

xx Streamer ~~from~~ in region #5-#15 line is

xx heavy - remove about 10-15 kts here

1500 - Resume 10kts. to Acapulco

171500 - Blew port generator again  
 Fixed fuel leak in SRBD engine

1830 - Awaiting pilot IG-

1900 - At dock End 24-3B

# SHOTPOINT PENPLOT PROGRAM

NO. OF FILES TO BE PLOTTED - 19

ENTER INPUT FILE # - 18  
ENTER INPUT FILE # - 19  
ENTER INPUT FILE # - 20  
ENTER INPUT FILE # - 21  
ENTER INPUT FILE # - 23  
ENTER INPUT FILE # - 24  
ENTER INPUT FILE # - 25  
ENTER INPUT FILE # - 26  
ENTER INPUT FILE # - 27  
ENTER INPUT FILE # - 28  
ENTER INPUT FILE # - 29  
ENTER INPUT FILE # - 30  
ENTER INPUT FILE # - 31  
ENTER INPUT FILE # - 32  
ENTER INPUT FILE # - 33  
ENTER INPUT FILE # - 34  
ENTER INPUT FILE # - 35  
ENTER INPUT FILE # - 36  
ENTER INPUT FILE # - 37

ENTER ANNOTATION INTERVAL - 0

PROGRAM PLOTS MERCATOR PROJECTION. STANDARD SCALES ARE:

1 INCH=2 $\frac{1}{2}$ N DEG. LONGITUDE

E.G. SCALE WILL BE 0.25 WHEN N=-2; 1 WHEN N=0; 4 WHEN N=2

PLOTS ARE 12 $\frac{1}{2}$ N DEG WIDE BY 6 $\frac{1}{2}$ N DEG HIGH

NORTH LATITUDE? - 11

WEST LONGITUDE? - 88

SCALE? - .5

SHOTPOINT MAP PROGRAM

ENTER LINE DESIGNATION - CR-7

ENTER START TIME (JULIAN DAY, HR, MIN) - 88,21,19

ENTER FIRST SHOTPOINT NO. - 1

ENTER END TIME (JULIAN DAY, HR, MIN) - 89,13,17

ENTER SHOTPOINT INTERVAL (SECS) = 26

ENTER CALCULATION INTERVAL - 20

ENTER NO. OF INPUT FILES - 2

ENTER INPUT FILE # - 36

ENTER INPUT FILE # - 39

ENTER OUTPUT FILE # - 34

ENTER OUTPUT FILE # - 35

PREPARING TO READ INPUT FILE # 36

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =20

PREPARING TO WRITE OUTPUT FILE # 34

HIT 'RETURN' WHEN TAPE IS READY

16

88.8881944444

88.8611111111

88.9125

PREPARING TO READ INPUT FILE # 39

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =17

PREPARING TO WRITE OUTPUT FILE # 35

HIT 'RETURN' WHEN TAPE IS READY

SHOTPOINT MAP PROGRAM

ENTER LINE DESIGNATION - CR-1

ENTER START TIME (JULIAN DAY, HR, MIN) - 82,07,57

ENTER FIRST SHOTPOINT NO. - 0988

ENTER END TIME (JULIAN DAY, HR, MIN) - ■■■■■■■■

ENTER SHOTPOINT INTERVAL (SECS) = 22

ENTER CALCULATION INTERVAL - 20

ENTER NO. OF INPUT FILES - 2

ENTER INPUT FILE # - 51

ENTER INPUT FILE # - 54

ENTER OUTPUT FILE # - 19

ENTER OUTPUT FILE # - 20

PREPARING TO READ INPUT FILE # 51

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =18

PREPARING TO WRITE OUTPUT FILE # 19

HIT 'RETURN' WHEN TAPE IS READY

4	82.33125	82.0972222222	82.3319444444
---	----------	---------------	---------------

PREPARING TO READ INPUT FILE # 54

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =22

PREPARING TO WRITE OUTPUT FILE # 20

HIT 'RETURN' WHEN TAPE IS READY

2	83.0034722222	83.0013888889	83.0340277778
---	---------------	---------------	---------------

ENDING LATITUDE = 10.2297552679

SHOTPOINT MAP PROGRAM

ENTER LINE DESIGNATION - CR-1

ENTER START TIME (JULIAN DAY, HR, MIN) - 82,01,56

ENTER FIRST SHOTPOINT NO. - 1

ENTER END TIME (JULIAN DAY, HR, MIN) - 82,06,47

ENTER SHOTPOINT INTERVAL (SECS) = 22

ENTER CALCULATION INTERVAL - 20

ENTER NO. OF INPUT FILES - 1

ENTER INPUT FILE # - 51

ENTER OUTPUT FILE # - 18

PREPARING TO READ INPUT FILE # 51

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =18

PREPARING TO WRITE OUTPUT FILE # 18

HIT 'RETURN' WHEN TAPE IS READY

3

82.0805555556

82.0381944444

82.0972222222

ENDING LATITUDE = 9.43284733732

ENDING LONGITUDE =

-85.4710560159

SHOTPOINT MAP PROGRAM  
ENTER LINE DESIGNATION - CR-1

ENTER START TIME (JULIAN DAY, HR, MIN) - 82,01,56  
ENTER FIRST SHOTPOINT NO. - 1  
ENTER END TIME (JULIAN DAY, HR, MIN) - 82,06,47  
ENTER SHOTPOINT INTERVAL (SECS) = 22  
ENTER CALCULATION INTERVAL - 20  
ENTER NO. OF INPUT FILES - 1  
ENTER INPUT FILE # - 1  
ENTER OUTPUT FILE # - 18  
PREPARING TO READ INPUT FILE # 51  
HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =18  
PREPARING TO WRITE OUTPUT FILE # 18  
HIT 'RETURN' WHEN TAPE IS READY

3	82.0805555556	82.0381944444	82.0972222222
---	---------------	---------------	---------------

P5  
1  
C2  
9.43284733732  
D2  
-85.4710560159  
REM ABOVE ARE LAT; LONG FOR END

SHOTPOINT MAP PROGRAM

ENTER LINE DESIGNATION - CR-6

ENTER START TIME (JULIAN DAY, HR, MIN) - 88,17,10

ENTER FIRST SHOTPOINT NO. - 1

ENTER END TIME (JULIAN DAY, HR, MIN) - 88,20,41

ENTER SHOTPOINT INTERVAL (SECS) = 90

ENTER CALCULATION INTERVAL - 20

ENTER NO. OF INPUT FILES - 1

ENTER INPUT FILE # - 36

ENTER OUTPUT FILE # - 33

PREPARING TO READ INPUT FILE # 36

HIT (RETURN) WHEN TAPE IS READY

# FILE ENTRIES READ =20

PREPARING TO WRITE OUTPUT FILE # 33

HIT (RETURN) WHEN TAPE IS READY

15

88.7152777778

88.7125

88.8611111111

ENDING LATITUDE = 9.1794876322

ENDING LONGITUDE =

-86.9193358983

SHOTPOINT MAP PROGRAM  
ENTER LINE DESIGNATION - CR-5

ENTER START TIME (JULIAN DAY, HR, MIN) - 86,21,01  
ENTER FIRST SHOTPOINT NO. - 1  
ENTER END TIME (JULIAN DAY, HR, MIN) - 88,01,01  
ENTER SHOTPOINT INTERVAL (SECS) = 22  
ENTER CALCULATION INTERVAL - 20  
ENTER NO. OF INPUT FILES - 3  
ENTER INPUT FILE # - 30  
ENTER INPUT FILE # - 33  
ENTER INPUT FILE # - 36  
ENTER OUTPUT FILE # - 30  
ENTER OUTPUT FILE # - 31  
ENTER OUTPUT FILE # - 32  
PREPARING TO READ INPUT FILE # 30  
HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =15  
PREPARING TO WRITE OUTPUT FILE # 30  
HIT 'RETURN' WHEN TAPE IS READY

12	86.8756944444	86.8541666667	86.9722222222
----	---------------	---------------	---------------

PREPARING TO READ INPUT FILE # 33  
HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =19  
PREPARING TO WRITE OUTPUT FILE # 31  
HIT 'RETURN' WHEN TAPE IS READY

SHOTPOINT MAP PROGRAM

ENTER LINE DESIGNATION - CR-4

ENTER START TIME (JULIAN DAY, HR, MIN) - 85,16,32

ENTER FIRST SHOTPOINT NO. - 1

ENTER END TIME (JULIAN DAY, HR, MIN) - 86,13,44

ENTER SHOTPOINT INTERVAL (SECS) = 22

ENTER CALCULATION INTERVAL - 20

ENTER NO. OF INPUT FILES - 2

ENTER INPUT FILE # - 27

ENTER INPUT FILE # - 30

ENTER OUTPUT FILE # - 28

ENTER OUTPUT FILE # - 29

PREPARING TO READ INPUT FILE # 27

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =20

PREPARING TO WRITE OUTPUT FILE # 28

HIT 'RETURN' WHEN TAPE IS READY

15

85.6888888889

85.6597222222

85.7104166667

PREPARING TO READ INPUT FILE # 30

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =15

PREPARING TO WRITE OUTPUT FILE # 29

HIT 'RETURN' WHEN TAPE IS READY

2

86.0657407407

86.0611111111

86.2541666667

ENDING LATITUDE = 8.6044308378

SHOTPOINT MAP PROGRAM

ENTER LINE DESIGNATION - CR-3

ENTER START TIME (JULIAN DAY, HR, MIN) - 84,21,12

ENTER FIRST SHOTPOINT NO. - 161

ENTER END TIME (JULIAN DAY, HR, MIN) - 85,07,37

ENTER SHOTPOINT INTERVAL (SECS) = 22

ENTER CALCULATION INTERVAL - 20

ENTER NO. OF INPUT FILES - 2

ENTER INPUT FILE # - 24

ENTER INPUT FILE # - 27

ENTER OUTPUT FILE # - 26

ENTER OUTPUT FILE # - 27

PREPARING TO READ INPUT FILE # 24

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =24

PREPARING TO WRITE OUTPUT FILE # 26

HIT 'RETURN' WHEN TAPE IS READY

20	84.8833333333	84.7951388889	84.9013888889
----	---------------	---------------	---------------

PREPARING TO READ INPUT FILE # 27

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =20

PREPARING TO WRITE OUTPUT FILE # 27

HIT 'RETURN' WHEN TAPE IS READY

2	85.0157407407	85.0111111111	85.0347222222
---	---------------	---------------	---------------

ENDING LATITUDE = 9.32789912934

SHOTPOINT MAP PROGRAM  
ENTER LINE DESIGNATION -

SHOTPOINT MAP PROGRAM

ENTER LINE DESIGNATION - CR-3

ENTER START TIME (JULIAN DAY, HR, MIN) - 84,20,03

ENTER FIRST SHOTPOINT NO. - 1

ENTER END TIME (JULIAN DAY, HR, MIN) - 84,21,11

ENTER SHOTPOINT INTERVAL (SECS) = 26

ENTER CALCULATION INTERVAL - 20

ENTER NO. OF INPUT FILES - 1

ENTER INPUT FILE # - 24

ENTER OUTPUT FILE # - 25

PREPARING TO READ INPUT FILE # 24

HIT 'RETURN' WHEN TAPE IS READY

# FILE ENTRIES READ =24

PREPARING TO WRITE OUTPUT FILE # 25

HIT 'RETURN' WHEN TAPE IS READY