



# SAN DIEGO ASSOCIATION OF GEOLOGISTS

## 1997 EXECUTIVE COMMITTEE

PRESIDENT	VICE-PRESIDENT	SECRETARY	TREASURER
Tissa Munasinghe Mira Costa College One Barnard Dr. Oceanside, CA 92056 (619) 757-2121 x6412 fax 634-7890	Werner Landry Development Svcs Dept. City of San Diego 1222 1st Avenue, ms 401 San Diego, CA 92101 (619) 236-7251	Lowell Lindsay Sunbelt Publications 1250 Fayette St. El Cajon, CA 92020 (619) 258-4905 x103 fax 258-4916	Greg T. Cranham Hargis + Assocs. Inc. 2223 Avenida de la Playa #300 La Jolla, CA 92037 (619) 454-0165 x108 fax 454-5839

## MEETING AND PROGRAM NOTICE

WEDNESDAY, APRIL 16, 1997

**Place:** Holiday Inn - Mission Valley Stadium  
3805 Murphy Canyon Rd.  
(619) 277 1199

**Time:** 6:00 - Social Hour  
7:00 - Dinner  
8:00 - Program

**Directions:** From I-15, exit West on Aero Dr., turn North on Murphy Canyon Rd.

**Dinner:** Crisp green (signature salad), Boneless breast of chicken with choice of sauce, Rice pilaf, Fresh Vegetables, Rolls and butter, Chocolate blackout cake, Coffee, and Tea.

**Cost:** \$20.00 per person

**Reservations required** by 5 p.m. Monday April 14 via phone to Lowell Lindsay (phone above) including name, number in party, and affiliation. Please call to cancel if necessary. A reservation made is a reservation paid.

## PROGRAM

**Speaker 1:** Thomas K. Gregory, Dept. of Marine Sciences, University of San Diego

**Topic:** Evidence for Local Bottom Water Entrainment in the TAG Active Hydrothermal System, 26 N Mid Atlantic Ridge

The TAG active hydrothermal mound, 26 N Mid Atlantic Ridge, was cored by Ocean Drilling Program Leg 158. The presence of anhydrite indicates shallow entrainment of local bottom water through the upper 50m of the mound. Hydrothermal clay mineral analyses has suggested two sources of fluid to the mound, deeply circulating highly altered hydrothermal fluid and shallowly circulating local bottom water. Rare earth element patterns in anhydrite are being used to further elucidate mound fluid circulation.

Speaker 2: Christian Walls, Dept. of Geol. Sciences, San Diego State University

Topic: Escape From L.A.: Extrusion Tectonics in Southern California and Implications for Seismic Risk  
[Christian Walls, Thomas Rockwell, Karl Mueller,  
Yehuda Bock, Simon Williams, John Pfanner, James Dolan, and Peng Fang]

We present a new geologic model that accounts for both the high geodetically determined rate of north-south shortening across the Los Angeles region as well as lower than expected slip rates recently observed on principal thrust faults. We integrate the most recent geologic, geodetic, and seismologic data to assess the spatial distribution and magnitude of strain across the Los Angeles region. Los Angeles lies within a transitional region where predominantly strike-slip rigid-block tectonics in the south gives way to east-west-trending folding and contractional faulting to the north. Geologic observations and seismicity show that nearly pure sinistral and dextral slip is observed where faults strike about N55E and N45W, respectively; these are symmetrical about S1 for this region. Nearly pure thrusting is observed perpendicular to S1, with oblique slip noted where there are significant deviations in fault strike. Strain rate data from continuously monitored GPS arrays were compared with geologically determined slip rates using relative fault-bounded block velocities and north-south and east-west vector sums for a 90X100 km area. Geodetic strain rates across the Palos Verdes and Elsinore faults are virtually identical to well documented slip rates determined by paleoseismic methods, and agree well with our long term rates for the western and central Sierra Madre-Cucamonga fault zone. Geologically derived sums of north-south shortening are consistently 1.5 mm/yr less than the geodetic average rate of 7 mm/yr. The east-west strain distribution across little studied strike and oblique-slip faults in the northern Los Angeles region is dramatically lower than the geodetic estimates and may suggest higher slip rate estimates are warranted for the Raymond, San Jose, Chino and Verdugo faults. Between the right-lateral Whittier fault and Sierra Madre-Cucamonga reverse fault system, clockwise block rotation and westward escape is accommodated on left-lateral faults. This area is coincident with a decrease in slip rate along the central Sierra Madre-Cucamonga fault system, suggesting that these conjugate left-lateral faults effectively partition strain away from the main reverse fault system. Consequently, the central Sierra Madre fault system with relatively low slip rates may pose less risk of future earthquakes than is presently believed, whereas other largely unstudied strike or oblique-slip faults may harbor a greater potential for future seismic events.

### ANNOUNCEMENTS

\* CORPORATE SPONSORS- Sincere thanks to these 1997 Corporate Sponsors who make possible educational assistance to a new generation of geologists:

Larry Cann; Joe Coronas; Perry and Nona Crampton; Bill Elliott; Jean Ferguson, F&C Drilling; Geocon Inc.; Dr. Blayne Hartman, TEG; Barbara Johnston; H.L.Strickler, Hargis + Associates Inc.; Dr. Anne Sturz; Phil Rosenberg, Tetra Tech EMI; David and Jan Steller; Southland Geotechnical Consultants; Carole Ziegler; Zeiser Kling Consultants.

#### \* EMPLOYMENT OPPORTUNITY-

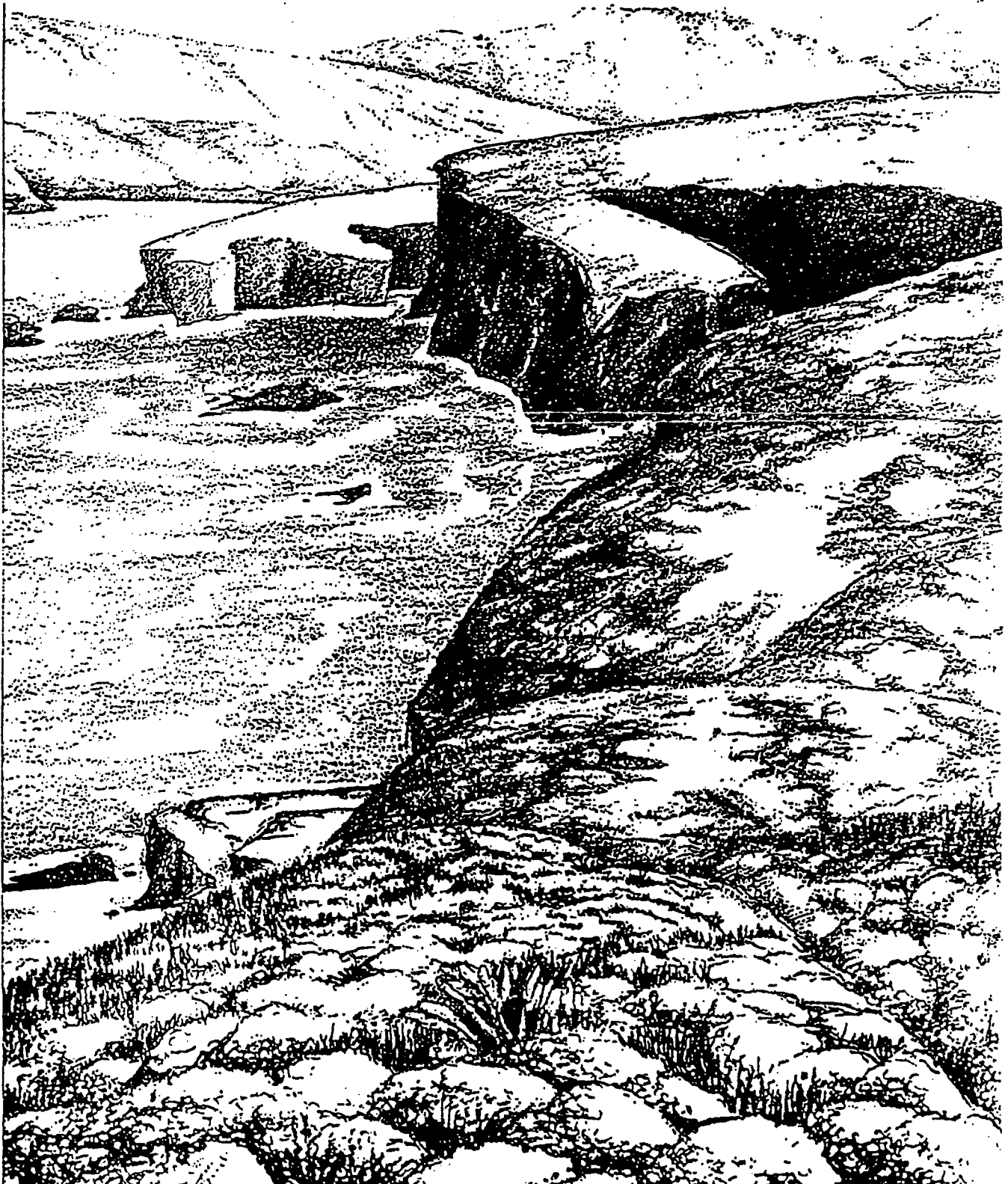
#### STAFF GEOLOGIST

Tetra Tech Technical Services is currently seeking a staff level geologist to perform Phase I and II environmental site assessments, underground storage tank removal oversight, geologic field mapping, misc. environmental field sampling, and report preparation. Ideal candidate should have 3 yrs pertinent experience, valid CA driver's license, and the ability to obtain a security clearance. OSHA Hazwoper training would be a plus. This is a temporary position that has the potential to become permanent. Please send resumes w/ cover letter to: Phil Rosenberg, Tetra Tech EMI, 591 Camino de la Reina, #640, San Diego, CA, 92108. NO PHONE CALLS...anyone who calls will be automatically deleted from the selection process!

\* MEMBERSHIP RENEWAL- 1997 memberships are due and payable. Mail the enclosed form to Greg Cranham (address above) or bring to this month's meeting. Call or mail address corrections to Lowell Lindsay (address above). An "exp" on address label indicates expired for 1997 per our records. This will be the last newsletter mailed to non-current members.

**The San Diego Association of Geologists  
1997 Annual Field Trip**

**GEOLOGY OF SANTA CRUZ ISLAND**



# 1997 Field Trip-SANTA CRUZ ISLAND

This is a rare opportunity to explore a beautiful, pristine island in the Channel Islands National Park.

Santa Cruz Island is the largest and most diverse of the Channel Islands. It is located 31 km southeast of Ventura, California, about a 2 hour boat ride. Most of the island is owned by the Nature Conservancy (90%), while the east end (10%) is owned by the National Park Service and private interests. The island is now part of the University of California's Natural Reserve System (Santa Cruz Island Reserve).

Since 1965, UCSB has operated a field station on the island to provide researchers with access. This spectacular island consists of about 60,000 acres of rugged mountains, rolling hills and valleys with sheer cliffs to the sea. The island has perennial streams, pine forests, marshes, grass lands; sea caves and a very diverse geologic history. Santa Cruz Island is uninhabited, except for the guides that will assist us and the ranch staff.

## Trip Details:

We will be leaving San Diego by charter bus on Friday night, October 17, 1997, boarding at 11:30 pm. The bus can seat only 49 passengers, so sign up early, first-come-first-served. (By the way-the boat and the island accommodations also can only handle 49 people-so we're all on one bus-the party bus).

The bus will arrive at the docks in Ventura, California around 3:30 am Saturday morning, October 18. We will then board the boat and leave for Santa Cruz Island by 4:00 am. We should arrive at the island around 6:00 to 6:30 am. We will then pack our belongings onto waiting vehicles for the 3 mile trip to the research station and our new home for the next two days.

After settling in and getting something to eat, we will depart for the day's tour. Refreshments and lunch will be provided during the day-complements of SDAG (we are bringing all our own food and are responsible for cooking and cleaning-there are no restaurants on the island-any good cooks out there thinking of going?-we need you).

Saturday night is spent at the station, either in bunk house quarters or outside in a tent-your choice (only 32 people can sleep inside, so sign-up early if you don't want to sleep in a tent). Sunday, October 19, we will again go into the field to conclude our geologic reconnaissance of the island. At 4:00 pm we will depart by boat back to Ventura and our waiting bus, which should arrive in San Diego around 10:00 to 11:00 pm.

The cost of the trip is **\$165.00 per person**. This will cover an awesome array of expenses, including charter bus, charter boat, lodging, land transportation, guides, food, guide book, etc... In order to be fair and to get confirmed seating, we will reserve your place when your check for \$165.00 is received. Refunds for the total amount will be issued up to September 1, 1997. After that, no refund, but you can sell your spot to someone else.

Note: The rules for the research station include the following:

*"All persons visiting the reserve must be actively engaged in research or instruction. Do not bring children, spouses, or guest sightseers."* (Plan accordingly)

Send your checks (made out to SDAG) directly to: **Werner Landry, 3230 Goldsmith St., San Diego, CA. 92106.** More information to come at our March meeting-see you there.

# San Diego Association of Geologists

## 1997 Membership Form

Please print clearly and check your preferred address for the newsletter

Name: \_\_\_\_\_

Residential Address: \_\_\_\_\_

Phone \_\_\_\_\_

Business Address: \_\_\_\_\_

Phone \_\_\_\_\_

Dues:	_____ Student Member	\$5.00
	_____ Regular Member	\$15.00
	_____ Corporate Sponsor	\$100.00

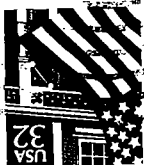
New Member \_\_\_\_\_ Continuing Member \_\_\_\_\_

Please enclose a check made payable to SDAG and mail to:

Greg T. Cranham  
Hargis & Associates, Inc.  
2223 Avenida De La Playa #300  
La Jolla, CA 92037

Membership dues may also be paid at the monthly meetings.

SUSAN E. TANGES  
1465 E. LEXINGTON AVE #7A  
EL CAJON, CA, 92019



San Diego Association of Geologists  
C/O Lowell Lindsay  
PO BOX 191126  
San Diego, CA 92159