

*at meeting  
(replacement for Jan issue)*

S T A R

National Capital Astronomers, Inc.



D U S T

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## DR. ZUBER: MEASURING MARTIAN TOPOGRAPHY

Maria T. Zuber, NASA Goddard Space Flight Center, Co-investigator for the Mars Observer Laser Altimeter (MOLA), will describe the MOLA project, which is expected to yield a considerable improvement in the knowledge of Martian topography.

Topographic knowledge is one of the fundamental measurements required for interpreting the state of a planet's interior tectonic, volcanic, impact, and erosional processes, as well as providing a constraint on atmospheric circulation. Present knowledge of Martian topography is derived from several sources. The data are of varying resolution and quantitative value.

NASA's Mars Observer Mission, scheduled to be launched in 1992, is to develop an improved global

topographic grid. MOLA will be included in the payload.

MOLA data are expected to permit global analysis of a broader scope of geoscience questions than any previous altimeter investigation, including Earth missions.

Dr. Maria T. Zuber received her B.A. in astrophysics and geology from the University of Pennsylvania in 1980, the Sc.M. in Geophysics from Brown University in 1983, and the Ph.D. in Geophysics from Brown in 1986. She has held a number of NASA positions and responsibilities, has received several honors and awards, and is a member of the American Geophysical Union and the American Association for the Advancement of Science.

### SEPTEMBER CALENDAR — The public is welcome.

Tuesday, September 4, 11, 18, 25, 7:30 pm - Telescope-making classes at Chevy Chase Community Center, Connecticut Avenue and McKinley Street, NW. Information: Jerry Schnall, (202) 362-8872.

Friday, September 7, 14, 21, 28, 7:30 pm - Telescope-making classes at American University, McKinley Hall Basement. Information: Jerry Schnall, (202) 362-8872.

Friday, September 7, 9:00 pm - NCA 14-inch telescope open night with Bob Bolster, 6007 Ridgeview Drive, south of Alexandria off Franconia Road between Telegraph Road and Rose Hill Drive. Call Bob at (703) 960-9126

Saturday, September 8, 5:45 pm - Dinner with the speaker at the Smithsonian Restaurant, 6th and C Streets, SW, inside the Holiday Inn. Reservations unnecessary. Use the 7th Street and Maryland Avenue exit of the L'Enfant Plaza Metrorail station.

Saturday, September 8, 7:30 pm - NCA monthly colloquium in the Einstein Planetarium of the National Air and Space Museum, 7th Street and Independence Avenue, SW. Enter Independence Avenue side. Dr. Zuber will speak.

Saturday, September 15, 6:00 pm to dawn - Hopewell Observatory open house (see article for directions).

Saturday, September 22, 7:30 pm - Exploring the Sky, presented jointly by National Capital Astronomers and the National Park Service, on Glover Road south of Military Road, NW, near Rock Creek Nature Center. Planetarium if cloudy.

## EPHEMERIS FOR COMET LEVY (1990c)

R.N. Bolster

Positions for Equinox 2000.0.

Evening, Sun at -18 degrees.

1990 DATE	UNIV. TIME	R.A.			Dec.	DELTA	r	COMET			MOON	
		h	m	s				h	Az	ml	h	Az
9 3	1 9	18	16.5	-22	39	0.500	1.292	28	188	3.6	26	142
9 5	1 5	17	55.2	-25	41	0.536	1.269	24	194	3.7	21	114
9 7	1 2	17	36.1	-28	9	0.576	1.248	20	199	3.7	10	88
9 9	0 58	17	19.1	-30	9	0.619	1.226	17	203	3.8	-2	63
9 11	0 55	17	4.1	-31	46	0.665	1.205	14	206	3.9		
9 13	0 51	16	50.8	-33	5	0.713	1.184	11	209	4.0		
9 15	0 48	16	39.1	-34	10	0.762	1.164	9	212	4.1		
9 17	0 44	16	28.7	-35	4	0.812	1.145	6	214	4.1		
9 19	0 40	16	19.4	-35	49	0.862	1.126	4	216	4.2		
9 21	0 37	16	11.1	-36	27	0.913	1.108	2	217	4.2		
9 23	0 34	16	3.6	-36	60	0.963	1.090	0	219	4.3	0	242
9 25	0 30	15	56.8	-37	28	1.013	1.073	-1	220	4.3	12	222

Morning, Sun at -18 degrees.

12 14	10 41	13	54.9	-40	50	1.726	1.283	1	149	6.3	5	125
12 16	10 42	13	51.8	-40	50	1.707	1.305	3	151	6.3		
12 18	10 43	13	48.4	-40	49	1.687	1.328	4	153	6.4		
12 20	10 44	13	44.9	-40	48	1.667	1.351	5	155	6.4		
12 22	10 45	13	41.2	-40	47	1.645	1.374	6	157	6.4		
12 24	10 46	13	37.2	-40	45	1.622	1.398	7	160	6.5		
12 26	10 47	13	33.0	-40	42	1.598	1.422	8	162	6.5		
12 28	10 48	13	28.6	-40	38	1.574	1.445	8	164	6.6		
12 30	10 48	13	23.9	-40	33	1.549	1.470	9	167	6.6	5	300
1991												
1 1	10 49	13	18.9	-40	27	1.524	1.494	10	169	6.6	26	279
1 3	10 49	13	13.5	-40	19	1.498	1.518	10	172	6.7	42	251
1 5	10 50	13	7.9	-40	9	1.472	1.543	11	174	6.7	47	215
1 7	10 50	13	1.9	-39	58	1.445	1.567	11	177	6.7	41	183
1 9	10 50	12	55.5	-39	44	1.419	1.592	11	180	6.8	29	159

The orbital elements used were from MPC 16684 (and IAU Circular No.5060 dated July 25). So far, Comet

Levy has been close to predicted brightness, and has been visible in binoculars from the suburbs.

### NCA INVITED TO HOPEWELL CORPORATION OBSERVATORY OPEN HOUSE

NCA members, families, and guests are invited to the autumn open house at Hopewell Observatory on Saturday evening / Sunday morning September 15/16 to observe Comet Levy (briefly), the summer Milky Way, Saturn, and Mars. Sunset will be at 7:20 pm. If you wish, come earlier (any time after 6:00 pm) and bring your prepared picnic dinner. Coffee, tea, cocoa, and soft drinks will be provided by the Hopewell Corporation.

From the Beltway (I-495) go west on I-66 25 miles to Exit 9 at Haymarket onto U.S. 15. Left on 15 0.3 mile to traffic light, right onto Va.

55, 0.8 mile to Antioch Road (Co. Rt. 681). Right on 681, 3.2 miles to end, left on Waterfall Road (601) 1 mile to County road 629. Right on 629 0.9 mile to narrow paved road at right. (Directly across from an entrance gate with stone facing on left.) Turn right, go 0.3 mile to top of ridge, go around microwave station and continue on dirt road through woods a few hundred feet to the observatory. Park along the road short of the buildings.

The event will be cancelled if it is raining or hopelessly cloudy. For further information call NCA: (301) 320-3621, or (703) 960-9126.

## OCULTATION EXPEDITIONS PLANNED

Dr. David Dunham is organizing observers for the following occultations. For further information call the NCA-IOTA Information Line: (301) 474-4945 (Greenbelt, MD).

Date	UT Time	Place	Vis. Mag.	Pcnt. Sunlit	Cusp Angle	Min. Aper.
Grazing lunar:						
09-12	06:24	Provid. Forge, VA	6.5	45	6N	5 cm
09-13	06:12	Mechanicsville, VA	8.0	34	5N	8 cm
09-13	06:31	South Range, WI	3.2	33	4N	2 cm
09-14	07:16	Seabrook, MD & DC	6.3	23	3N	5 cm
09-25	23:36	Mercersburg, PA	7.6	39	10S	5 cm
09-29	02:33	Urbana, MD	8.2	69	17S	12 cm
Asteroidal:						
			Star Mag.	Delta Mag.	Name	
09-09	09:01	Quebec*	8.6	5	(276) Adelheid	5 cm
09-16	07:50	Carolinas	10.5	3	(121) Hermione	16 cm
09-27	10:57	Illinois	11.6	0.7	(216) Kleopatra	20 cm
09-30	05:19	California*	8.0	4	(51) Nemausa	5 cm

\*Appulse to be observed for possible satellites or path shift.

## TREASURER'S REPORT

### 1. GENERAL FUND

#### INCOME

Dues	7,774.00
Sale of Observer's Handbooks	335.00
Orders for other publications	78.88
Sale of T-shirts	150.00
Telescope-making classes	553.00
Interest	246.37
Donations	<u>85.45</u>

Total Income \$9,222.70

#### EXPENSES

Sky and Telescope subscriptions	4,000.00
Purchase Observer's Handbooks	292.00
Purchase other publications	79.88
Star Dust Printing	\$1,323.80
Postage	1,260.05
Total	2,583.25
Speakers' Dinners	121.67
Astronomical League dues	433.85
International Dark-sky Association dues	100.00
Insurance - Liability	344.00
Telephone	373.52
Admin. incl. postage and copying	<u>294.76</u>

Total Expenses \$8,622.54

Excess income over expenses	600.16
Balance 1 July 1989	<u>3,980.88</u>
Balance 30 June 1990	<u>\$4,581.04</u>

Ruth S. Freitag  
Treasurer

### 2. NCA TRAVEL

Balance 1 July 1989	1,791.44
Interest	<u>100.78</u>
Balance 30 June 1990	1,892.22
GENERAL FUND BALANCE	<u>4,581.04</u>

3. TOTAL NCA BALANCE 1 JULY 1990 \$6,473.26

Robert H. McCracken  
Trustee

EXCERPTS FROM THE IAU CIRCULARS R.N. Bolster

1. May - A team of French researchers reported the detection of formaldehyde and methanol molecules in Comet Austin (1989c1). The observations were made with the IRAM 30-m radio telescope.

Kiuchi, Usuda, Japan, independently discovered a comet (1990i) of 8th magnitude on the border between Canes Venatici and Coma Berenices. Tsuchiya used an f/4 camera with T-Max film, Kiuchi used 25x150 binoculars.

2. May 20 - David Levy, Tucson, Arizona, discovered a comet (1990c) of 10th magnitude in Pegasus with a 40-cm reflector.

6. May 25, June 15, August 16 - R. Evans, Hazelbrook, Australia, discovered three supernovae of 14th and 15th magnitude in NGC 150, 5493, and 6221.

3. June 19 - R.H. McNaught discovered a comet (1990g) of 17th magnitude in Ara on a U.K. Schmidt Telescope photograph taken by S.M. Hughes.

7. August - Bowell, Lowell Observatory, Kinoshita and Yoshikawa, National Observatory, Tokyo, and Innanen and Mikkola, York University, Toronto, have studied the orbit of minor planet 1990 MB and concluded that it is a "Mars Trojan," the first of its kind found. Calculations by Marsden, Center for Astrophysics, show its distance from Mars changing only from 1.5 to 1.8 AU in 1850 to 1.3 to 1.6 AU in 2400.

4. July - M.R. Showalter, NASA Ames Research Center, discovered a satellite 20 km in diameter in the Encke Gap in Saturn's A ring using pre-encounter images from Voyager 2.

5. July 13, 15 - K. Tsuchiya, Asahikawa, Japan, and T.

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FIRST CLASS