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STAR DUST

National Capital Astronomers, Inc. Washington, DC (301) 320-3621

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OCTOBER MEETING CANCELLED

The OCTOBER Monthly Colloquium had to be CANCELLED due to the possibility of the partial shutdown of ther U. S. Government from Gramm-Rudman funds sequestration and its effects on the Air and Space Museum. Alternative sites which had been scheduled were also subject to the sequestration problem and no site commitments could be confirmed in time for notice to members.

- Watch *STARDUST* for November meeting place announcement -

Maurice Shapiro To Be Honored at NRL

Naval Research Laboratory (NRL) is hosting a conference, *Symposium: Frontiers of High Energy Astrophysics*, in honor of Dr. Maurice Shapiro, a trustee of NCA. The event will be held at 9:00 AM with dinner at 7:00 PM at NRL. For reservations, contact Lisa Dial at Universities Space Research Association, 600 Maryland Ave. SW, Suite 303, West Wing, Washington, DC 20024; (202) 479-2609.

Barbara Becker to Speak On Quasar Redshift Controversy

- For the November Colloquium -

Barbara Becker is a doctural candidate in the History of Science Department at the Johns Hopkins University in Baltimore. She has been teaching astronomy at Goucher College for the past ten years and has served as a part-time instructor in the Physics Department at Towson State University from 1980 until she began her graduate studies in 1986. Her topic for the November Colloquium will focus on the controversy regarding the interpretation of quasar redshifts. *STARDUST* will present more on her topic in the November issue.

OCTOBER CALENDAR -- ***The Public is Welcome***

Tuesday, October 2, 9, 16, 23, 30, 7:30 pm - Telescope-making classes at Chevy Chase Community Center, Connecticut Avenue and McKinley Street, NW. Info: Jerry Schnall, (202) 362-8872.

Friday, October 5, 12, 19, 26, 7:30 pm - Telescope-making classes at American University, McKinley Hall Basement. Information: Jerry Schnall, (202) 362-8872.

Friday, October 5, 19, 26, 8:30 pm - NCA 14-inch telescope open nights 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, October 13, 7:00 pm - *Exploring the Sky*, presented 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. Info: Dr. John Lohman: (703) 820-4194 or NCA: (301) 320-3621.

Thursday ~~Tuesday~~, **October 18, 9:00 am** - *Symposium: Frontiers of High Energy Astrophysics* at Naval Research Laboratory - See article above.

Saturday ~~Friday~~, **October 20, 11:30pm** - *Earth Night, 1990,* sponsored by *The Smithsonian Resident Associate Program,* led by Walter Nissen and Daniel Costanzo of NCA. Participants will witness the Orionid meteor showers and more from Big Meadows in the Blue Ridge Mountains in Shenandoah National Park. Leaves from mall entrance of National Museum of National History. Returns 10:30 am the next day. For further information and for reservations call (202) 357-3030.

November 3, 7:30 pm - NCA colloquium featuring Barbara Becker's lecture on the Quasar Redshift Controversy will be held at a meeting site to be anounced - Watch *STARDUST*-

September Colloquium - Geology of Mars

At the September 8, NCA colloquium, Dr. Maria T. Zuber of the Geodynamics Branch of NASA's Goddard Space Flight Center explained the importance of topographic measurements in the study of Mars, and described the Mars Observer Laser Altimeter (MOLA) being built to obtain greatly improved data during the Mars Observer Mission.

Present topographic data show that Mars has the greatest relief of any planet, with Olympus Mons 29 km above and Valles Marinaris 8 km below the mean surface level. The Tharsis bulge, site of several volcanos, is about 10 km high, and much of the northern hemisphere is 3 km lower than the southern. Complete understanding of the subsurface structures which explain these features and smaller ones such as local gravitational anomalies, thrust faults, grabens, lava flows, and polar cap terraces requires better data than is now available.

Present data from Earth-based radar observations give heights with 50 m resolution, but only near the equator and not on the roughest (and most interesting) areas. Photogrammetry and atmospheric density measurements by spectrometry provide data, but these contain uncertainties of 6 km in altitude, especially over long distances.

The MOLA will employ an infrared laser and a small telescope to scan the Martian surface from orbit, measuring the altitude with a precision of 30 m by timing the interval required for a laser pulse to be reflected from the surface and received by the sensor. Over short distances a relative precision of 1.5 m is expected. During the mission lifetime of one Martian year the surface should be covered with a grid of measurements spaced by only 0.2 km. The resulting topographic data base will actually be somewhat better than that available for the Earth! Africa and South America in particular are not as well surveyed. Similar data were obtained for the Moon during some of the later Apollo flights, but with less coverage due to the limited lives of the lasers then available.

Steep slopes may be difficult for the altimeter to range on due to the broadening of the reflected pulse. However, the pulse width provides a useful measure of the roughness. Daylight interferes only slightly due to the monochromatic source and narrow bandpass filter on the sensor. Dust clouds formed by storms during part of the Martian year may interfere with the altimeter by absorbing or scattering the beam. If the clouds are dense enough, altitudes of the cloud tops might be bonus information from a relatively simple but potentially very productive experiment.

- R.N. Bolster and D.J. Costanzo

Beautiful Sky for NCA Open House at Hopewell Observatory

The sky west of Manassas was most cooperative for the night of September 15/16 when NCA members and guests attended a fall star party at the Hopewell Obsevatory on the top of Bull Run Mountain in Virginia.

Comet Levy, Saturn, Neptune and many deep sky objects were among those enjoyed that evening, however the leading attraction was a crystal clear sky not often enjoyed this close to the Nation's Capital, yielding an outstanding naked-eye view of the Milky Way. With the observatory roof rolled back, members and guests could observe through Bob McCracken's 14 inch Celestron and Bob Bolster's 12 inch Wright-Schmidt telescope. Another interesting device was an 8 inch Meade equipped with a computer controlled drive system. How nice simply to tell your telescope you want it to change position to view M-31 and have it automatically swing to position directly on target.

- Dick and Nancy Byrd

October Meteor Shower - The Orionids

The annual shower of meteors known as the Orionids will reach maximum between October 20 and 24. The best time to observe is well after midnight when the radiant of the shower will be highest above the horizon. The moon will be absent from the morning sky, and the viewing is expected to be excellent. The radiant is north of Betelgeuse in the constellation of Orion. At maximum, the shower should produce about twenty-four meteors per hour, but a very dark sky may be needed to observe this high a frequency. Light pollution can seriously reduce the number of observable meteors.

Occultation 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	Local Time	Place	Vis. Mag.	Pcnt. Sunlit	Cusp Angle	Min. Aper.
Grazing Lunar:						
10-13	06:16	Loganville, PA	8.6	26	10S	20 cm
10-28	00:28	Maugansville, MD	6.9	63	14S	10 cm
10-28	18:47	Frederick, MD	7.5	71	16S	13 cm
10-30	22:27	Jones Mills, PA	5.8	89	19S	5 cm
11-05	21:59	Huntingtown, MD	4.9	85	2N	5 cm
Asteroidal:			Star Mag.	Delta Mag.	Name	
10-13	20:57	S. Canada*	9.2	4	(537) Pauly	5 cm
10-30	03:42	Miami, FL*	9.1	4	(804)Hispania	5 cm

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

NCA Welcomes new members

Gary L. Biggs
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Andrew C. Peffer
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Tom Van Flandern
6327 Western Ave. N.W.
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EXCERPTS FROM THE IAU CIRCULARS

R.N. Bolster

1. August - Several observers, including Miyazaki, Balella, Parker, O'Meara, and Beish reported that the South Equatorial Belt of Jupiter appeared to be darkening again. Images obtained by Friedson, Caldwell, Griep, and Orton at the NASA Infrared Telescope Facility on August 27 at a wavelength of 5 micrometers showed a faint warm band at the SEB's location, also indicating that it may be returning to normal.

2. September - Tuttle and Campbell-Wilson, University of Sidney; and Manchester, Stavely-Smith, and Kesteven, Australia Telescope National Facility, CSIRO; detected the reappearance of supernova 1987A in the LMC as a radio source in July. These observations were made at 843 MHz using the Molonglo Observatory Synthesis Telescope. The source continued to brighten during August. It was also detected in August at 4790 and 1472 MHz with the Australia Telescope Compact Array.

3. September 14 - H.E. Holt and C.M. Olmstead discovered a comet (1990k) of 17th magnitude in Pisces on photos taken with the 46-cm Palomar Schmidt.

4. September 15 - Jean Mueller discovered a comet (1990j) of 17th magnitude in Pisces only a few degrees from (1990k) on photos taken with the 1.2-m Oschin Schmidt at Palomar.

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