OCCULTATION EXPEDITIONS PLANNED

Dr. David Dunham is organizing observers for the following grazing lunar and asteroidal occultations. For further information call Dave at 985-9859.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Place</th>
<th>UT Place</th>
<th>Vn</th>
<th>Pcmt</th>
<th>Csp</th>
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<tbody>
<tr>
<td>04-02</td>
<td>08:26</td>
<td>San Antonio, TX</td>
<td>9</td>
<td>3</td>
<td>85</td>
<td>65</td>
<td>5 cm</td>
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<tr>
<td>04-23</td>
<td>09:02</td>
<td>Deerfield, IL</td>
<td>4</td>
<td>4</td>
<td>87</td>
<td>6</td>
<td>4 cm</td>
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<tr>
<td>04-23</td>
<td>09:06</td>
<td>Grelled Point, OR</td>
<td>0</td>
<td>4</td>
<td>87</td>
<td>6</td>
<td>5 cm</td>
</tr>
<tr>
<td>04-28</td>
<td>09:59</td>
<td>Daleville, PA</td>
<td>6</td>
<td>8</td>
<td>80</td>
<td>10</td>
<td>10 cm</td>
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<tr>
<td>05-05</td>
<td>01:40</td>
<td>Kharatoun, Sudan</td>
<td>2</td>
<td>8</td>
<td>82</td>
<td>6</td>
<td>0.5 cm</td>
</tr>
</tbody>
</table>

Note: Time in UT. 

NCA WELCOMES NEW MEMBERS

Lind B. Karlson
4533 Gladwynne Drive
Bethesda, MD 20814

Steven Strouse
7201 South Dakota Avenue, NE
Washington, DC 20018

Francis J. Kling Family
4400 Ridge Street
Chevy Chase, MD

Frederick R. Stines
3121 50th Street
20851 Washington, DC 20009

Craig Magarella
3328 Woodburn Drive
Annandale, VA 22003

Robert L. Uphoff
Route 1, Box 577
Mt. Jackson, VA 22842

S. P. Miller, A. Brown
6211 Poe Road
Bethesda, MD 20817

Melvin C. Wiggins
5905 Parkland Drive
Forestville, MD 20747

NOMINATING COMMITTEE APPOINTED

The Nominating Committee has been appointed for the May election of NCA officers: Robert McCrudden, Chairman; William P. Pala, Robert N. Boles, Daniel G. Butcher.

Others may nominate candidates by petition of 10 full members in good standing, presented to the secretary prior to the May 6 election.

NCA GREEN BANK TRIP SET

National Capital Astronomers will visit the National Radio Astronomy Observatory at Green Bank, West Virginia, on the weekend of May 11-12. Mark your calendar for a memorable experience. Please bring your camera and plenty of film for both the unique opportunities at the Observatory and the beauty of the West Virginia mountains in the spring.

A number of telescopes will be available for use under the dark rural sky on Saturday night; the observatory will be visited on Sunday.

We will meet our charter bus at the Department of Commerce Building for a prompt 9:00 am departure on Saturday, May 11. Special free weekend parking arrangements have been made for participants.

Cost for members will be $25.00, for non-members, $75.00, based on double occupancy in single supplement, $10.00; for third person in room, $15.00. Transportation and motel costs, but not meals, are included.

Space is limited. To reserve your place, deposit $25.00 before April 27. Make checks payable to National Capital Astronomers, mark it "Green Bank trip," and mail (or deliver at the NCA meeting) to Ruth S. Freitag, Treasurer, 1300 Army-Navy Drive, Arlington, VA 22202.

SPECIAL BEGINNERS PHOTOGRAPHY SESSION WITH NCA 14-INCH TELESCOPE

On April 26 and 27 will be held the first session of the new 14-inch telescope. Anyone interested in learning to take photographs of the moon and planets is invited to attend.

The following are some basic tips:

1. Keep a notebook to record your observations.
2. Use a red-filtered light to observe the moon and planets.
3. Use a tripod to keep the camera steady.
4. Use a shutter release to avoid hand shake.
5. Use a timer to set the shutter speed.
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EXCERPTS FROM THE IAU CIRCULARS

1. September -- Van der Klis, Jansen, van Paradijs, Lewin, Trümper, and Sathiojo, made observations with the EXOSAT spacecraft of the bright galactic hudge source GX 3-1, which showed 25- to 50-s variations at 1 to 10 keV. Such rapid X-ray variability has never been observed before. Alpar and Shaham suggest that a neutron star with a rotational period of 6 ms may be at the center of the object.

2. November -- Benz, Moseley, and Papaloizou, Center for Astrophysics, reported that speckle interferometry of X-3291 showed a second source 0.355 north of the primary. Confirmed with the 2.5-m Hooker telescope, it had been first detected a year earlier with the 2.3-m reflector of Steward Observatory.

3. February -- Benz, Tedesco, and Tholen reported that occultations and transits of Pluto and 1978 P1 (Charon) have been observed. Three partial events have been observed. Deeper events, eclipses, and shadow transits may be detected in 1986.

4. February 17 -- Wyckoff, Peltz, Holler, Mehinger, Wagner, Schleicher, and Feston reported that spectra taken with the 4.5-m MTV of Comet Halley showed weak lines of CN emission at 387.5 nm and traces of other very weak emission lines.

NASM PLANETARIUM PRESENTS FREE LECTURES, SUN VIEWING

On Saturday, April 6, at 10:00 am, Thomas R. Gallen II will speak on The Milky Way: An Insider's View. Following the program, weather permitting, Stanley Cauvel and Geoffrey Chester will offer a free telescope hydrogen-alpha viewing of the Sun.

On Wednesday, April 24, at 1:30 pm, Laurey Winken, University of Arizona, will speak on Comets: Rule of a Cold and Distant Past.

FOR SALE

Criterion 4000 Telescope, complete with tripod, 2 eyepieces, and clock drive. Cost $600.00, sell for $498.00. Call M. Kamelgarn, (703) 893-1415.

Eight-inch Cave delux model refractor with motor drive, finder, 4 eyepieces, 1 Barlow lens. $495.00. Glen O. Darr, Falls Church, VA, (703) 527-1197.


Dr. Bruce Woodgate, NASA Goddard Space Flight Center, will bring new results from the Solar Maximum Mission (SMM) to the April meeting of the National Capital Astronomers.

A periodicity in gamma-ray and hard X-ray production of 155 days, of unknown origin, has been detected. Particle energies produced in flares are much higher and appear more rapidly than previously expected or currently explained. Neutrons of up to 600 MeV have been detected at the spacecraft, and gamma rays above 25 MeV have been accelerated in less than 2 s, coincident with hard X-rays. Gamma-ray flares above 10 MeV occur more frequently at the limb of the Sun, showing them to be produced from vertically directed particle beams. Gamma-ray spectrum lines show nuclear oscillations have occurred by accelerated proton beams. Ultraviolet continuum bursts occur in coincidence with hard X-ray bursts to 1 s, whereas 1- to 2-s delays would be expected.

The Sun has decreased in total irradiance by 0.1 percent over 4 years. Will it go up again at the next solar maximum? Can we survive all this?

Born in England, Dr. Bruce Woodgate received the B.S. in physics and his Ph.D. in astronomy from the University of London. After 6 years at Millard Space Laboratory designing and building ultraviolet instruments for solar experiments on the OGO-6 spacecraft, he came to the United States in 1971 and became the Associate Director of the Astrophysics Laboratory at Columbia University, New York. He spent 1974 at the Goddard Institute for Space Studies, where he worked on Landsat under Robert Jastrow. He came to Goddard Space Flight Center in 1975 to work on ultraviolet spectrometers for SMM, and became Project Scientist for SMM in 1983.

MARCH CALENDAR -- The public is welcome.

Tuesday, April 2, 9, 16, 23, 30, 7:30 pm -- Telescope-making classes at Chevy Chase Community Center, Connecticut Avenue and McKinley Street, NW. Information: Jerry Schmell, 362-8872.

Friday, 5, 12, 19, 26, 7:30 pm -- Telescope-making classes at American University, McKinley Hall basement. Information: Jerry Schmell.

Friday, April 12, 19, 26 (Special -- see p. 71), 8:00 pm -- NCA 14-inch telescope open nights with Bob Bolster, 8007 Ridgeview Drive, south of Alexandria off Franconia Road between Telegraph Road and June Hill Drive. Call Bob at 960-3126.

Saturday, April 5, 6:00 pm -- Dinner with the speaker at the Ding How Restaurant, 1221 E Street, NW. Reservations unnecessary.

Saturday, April 5, 9, 15 pm -- NCA monthly meeting at the Department of Commerce, 14th Street and Constitution Avenue, NW. Dr. Woodgate speaks.

Saturday, April 19, 8:00 pm -- Discussion group at the Department of Commerce, Conference Room D.