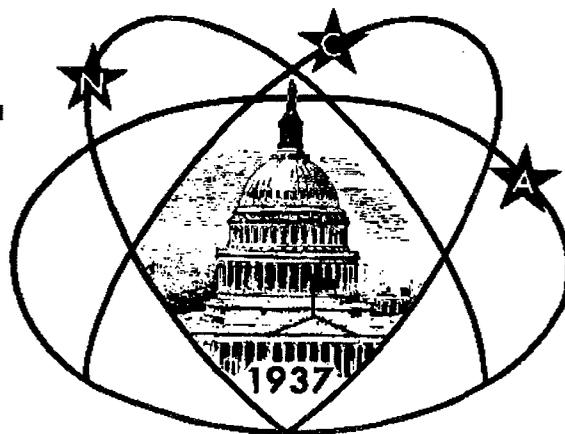


Star



Dust

National Capital Astronomers, Inc.

Phone: 301/320-3621

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## Science Fair Winners and Discussion of Project ASTRO

by Wayne H. Warren, Jr.

### Science Fair Winners

The next meeting of the National Capital Astronomers will be held Saturday, June 1, at 7:30 P.M. in the Lipsett Amphitheater of the Clinical Center (Building 10) at the National Institutes of Health (NIH). As is customary for our last meeting of the season, this year's National Capital Area NCA science fair winners will be on hand to describe and discuss their astronomy-related projects. The winners include: Aminata M. Croulet, Silver Spring, MD (The Channels of Mars); John W. Kim, Bethesda, MD (A Study of the Interior of Mars); Natalie S. Olden-Stahl, Germantown, MD (Great Sunspots! Do They Really Affect Our Climate?); Theresa C. Smith, Laurel, MD (Comparing Compounds' and Comet's Spectra); Valerie J. Warner, McLean, VA (Seeing Objects in a New Light); and Craig R. Wasserstrom, Washington, DC (The Effect of Solar Activity on the Earth's Magnetic Field). We hope that all of these students will be able to attend the meeting to display and discuss their projects.

### Project ASTRO

Project ASTRO was conceived by the Astronomical Society of the Pacific (ASP) as a project to link 4th to 9th grade teachers with local astronomers for purposes of forming partnerships to keep the teachers up to date about astronomical events and having astronomers visit schools to work together in other ways.

This program began in California and has clearly been successful, based on the fact that the ASP recently received grants from both the National Science Foundation (NSF) and NASA to expand the program nationally.

In addition to at least four visits by astronomers to classrooms each year, the astronomers and teachers train together at a 2-day summer workshop to develop programs for the sharing of astronomy with the students. The program stresses hands-on activities such as observing planetarium work, and demonstrations whenever possible, and attempts to involve other members of a student's sphere of influence as well.

Three major U.S. cities have been chosen for expansion of this program; Baltimore, Chicago, and San Francisco,

with three other sites slated for selection in the coming year. Since Baltimore is one of the first sites, astronomers in the Washington area will soon be involved with this program, including Montgomery College and Harold Williams. Harold will tell us more about this program and how NCA members might become involved.

We have all seen recently how science is suffering at the hands of a Congress that is (justifiably so) attempting to balance the federal budget. We have seen quite a number of pleas from both science supporters in Congress and by the directors of various agencies for scientists to become more involved in the legislative process and in conveying the excitement and importance of

See *ASTRO*, page 6

## NCA Officers for 1996-1997

The nominating committee, consisting of Jay Miller, John Graham, and Wayne Warren, presented its slate of candidates at the May meeting. The following officers of the National Capital Astronomers were elected unanimously for the coming year:

President:  
Vice President:  
Secretary:  
Treasurer:  
Audio-Visual Engineer:  
Trustee:

Dr. Harold A. Williams  
Andrew W. Seacord  
Leith Holloway  
Jeffrey B. Norman  
Caleb Fassett  
Robert N. Bolster

NCA Trustees for the coming year are: Bob Bolster, Nancy Byrd, John Graham, and Jay Miller ☀

## Calendar of Monthly Events

*The Public is Welcome!*

**Daily**—The Smithsonian Institution, National Air and Space Museum (NASM) Einstein Planetarium events. See page 6 for details. Recorded information (call anytime): 202/357-1550, or 202/357-1686.

**Mondays through Saturdays, 11:30 AM and 2:30 PM, Sundays 11:30 AM**—Goddard Space Flight Center (GSFC-Greenbelt, MD) guided walking tours. Start at Visitors Center. Details & Directions: 301/286-8981 (TDD 301/286-8103). Visitors Center Home Page, <http://www.pao.gsfc.nasa.gov>.

**Tuesdays and Fridays, 7:00-9:30 PM**—Mirror-making classes with Jerry Schnall. Meet on Tuesdays at the Chevy Chase Community Center at Connecticut Avenue and McKinley Street. Meet on Fridays at American University, McKinley Hall Basement. Information: 202/362-8872.

**Saturday, June 1, 5:30 PM**—Dinner with the science fair winners at Shakey's, East-West Highway and Wisconsin Ave., Bethesda, MD., before the monthly meeting. See the map on the back page for directions.

**Saturday, June 1, 7:30 PM**—The June NCA meeting will feature the Washington area science fair winners and a discussion of how NCA members can participate in project ASTRO. Meeting also includes information on Comet Hyakutake and Hale-Bopp. The meeting will take place at NIH in the Lipsett Auditorium in the Clinical Center (Building 10). For directions, refer to map and description on back page.

**Sunday, June 2 and 16, July 7 and 21, August 4 and 18, 1:00 PM**—Model rocket launches at GSFC Visitors Center. See other GSFC listings.

**Mondays, June 3, 10, 17, and 24, 8:30 PM**—U.S. Naval Observatory (USNO—Washington, DC) public nights. Includes orientation on USNO's mission, viewing of operating atomic clocks, and glimpses through the finest optical telescopes in the National Capital region. Information: USNO Public Affairs Office, 202/762-1438.

**Wednesday, June 5**—June "Sky Watch" column appears in *The Washington Post* "Style" section. Lists many event for the month.

**Wednesday June 5 and Thursday June 20, 9:00 PM**—University of Maryland (UMD—College Park, MD) Observatory open house. Includes slide show,

lecture, and viewing through telescopes. Held regardless of cloud cover. Information: 301/405-3001.

**Fridays, June 7, 14, 21; July 5, 12, 19, and 26, 9:30 PM**—NCA 14-inch telescope open nights with Bob Bolster, 6007 Ridge View Drive, south of Alexandria, off Franconia Road between Telegraph Road and Rose Hill Drive. Call Bob at 703/960-9126.

**Saturday, June 8 and 22, July 13 and 27, August 10 and 24, 11:00 AM and 2:00 PM**—GSFC guided bus tours. Start at Visitors Center; visit full-sized mockups of the Space Shuttle and Hubble Space Telescopes (neither visited during walking tours). See other GSFC tour listings.

**Saturday, June 8, Night**—Last Quarter Moon provides this month's *second* longest Saturday night "deep night" period, with Moon-free skies from dusk till Moonrise (1:48 AM EDT). See "Deep Night" periods explanation on page 4.

**Saturday, June 15, Night**—New Moon provides this month's *longest* Saturday night "deep night" period, with Moon-free skies all night long. See "Deep Night" periods explanation on page 4.

**Monday, Tuesday, and Wednesday, June 17, 18, and 19, Dusk**—Young crescent Moon with Earthshine, conveniently situated for observation and enjoyment. Easily viewable with unaided eye, even from light polluted areas. Particularly impressive from the Mall with Washington Monument. Details (recording-call on the above dates): 202/357-2000

**Saturday, June 22, Dusk**—(Civil twilight ends around 9:10 PM.) Geoff Chester (NASM) conducts sky watching (weather permitting) at Sky Meadow State Park (near Paris, VA). Information: Sky Meadows, 540/592-3556; Geoff Chester, 202/357-1529.

**Saturday, June 22, 9:00 PM**—NCA and NPS sky watching program: *Exploring the Sky* in Rock Creek Park at Military and Glover Roads, NW. Bring binoculars and telescopes, although some telescopes available (thanks to NCA). NCA volunteers always needed! Information: Nature Center, 202/426-6829; Joe Morris (NCA), 703/620-0996.

**Saturday, June 22, Night**—Waxing crescent Moon provides this month's *third* longest Saturday night "deep night" period, with Moon-free skies from

Moonset (12:29 AM EDT Sunday morning) till dawn. See "Deep Night" periods explanation on page 4.

**Sunday, June 23, 1:00 PM**—GSFC public lecture: David Shrewsbury (Special Payloads Division, GSFC), "Special Payloads," GSFC Visitors Center. Information: 301/286-8981 (TDD 301/286-8103); Steve Moore (GSFC), 301/286-3978.

**Tuesday, June 25, 9:00 AM**—NASM Teacher Workshop: "Cosmic Voyage: Up Close and Far Away." Briefing Room. Details: 202/786-2524 (TTY 202/357-1505).

**Mondays, July 1, 8, 15, 22, and 29, 8:30 PM**—USNO public nights. See June listing.

**Wednesday, July 3**—July "Sky Watch" column appears in *The Washington Post* "Style" section. It lists many events for that month.

**Friday, July 5 and Saturday, July 20, 9:00 PM**—UMD Observatory open house. See June listing.

**Friday through Sunday, July 12-14**—"Summer Escape to Blackwater Falls, West Virginia." The Smithsonian Associated (TSA) three-day weekend study-tour on nature and astronomy (TSA Code: 11N-2ZZ). Led by Daniel Costanzo (NCA) and Rob Gibbs. Information, cost, and registration: TSA, 202/357-3030; TSA Home Page, <http://www.si.sgi.com/youandsi/tsa/start.htm>. See *Star Dust* May issue, pages 4-5.

**Saturday, July 13, 9:00 PM**—NCA and NPS sky watching program: *Exploring the Sky*. See June listing.

**Saturday, July 13, Night**—Waning crescent Moon provides this month's longest Saturday night "deep night" period, with Moon-free skies all night long. See "Deep Night" periods explanation on page 4.

**Sunday, July 14, 8:00 AM**—National Space Society (NSS) 4th Annual "Race For Space," 5k and 1k "fun run." Begins at NASM. Also includes educational displays. Information: NSS, 202/543-1900.

**Tuesday, July 16 through Wednesday, July 24**—Spaceweek 1996. Celebrated *Apollo 11* Moon landing's 27th anniversary. Information: Spaceweek International Association, 713/333-3627.

**Wednesday, Thursday, and Friday, July 17, 18, and 19, Dusk**—Young crescent Moon with Earthshine, conveniently situated for observation and enjoyment. See June listing.

**Thursday July 18 through Friday, July 19**—Public symposium: "Mars Revisited: A Forward Look."

Celebrated *Viking 1* Mars landing's 20th anniversary. Information: Judy Cole (NASA), 804/865-7604; The Planetary Society, 800/969-MARS. See *Star Dust* May issue, page 6 (dates incorrectly given as June 18-19).

**Saturday, July 20, Dusk**—(Civil twilight ends around 9:00 PM.) Sky watching at Sky Meadow State Park. See June listing.

**Saturday, July 20, Night**—Waxing crescent Moon provides this month's second longest Saturday night "deep night" period, with Moon-free skies from Moonset (11:03 PM EDT) till dawn. See "Deep Night" periods explanation on page 4.

**Saturday July 27, 10:00 AM to 4:30 PM**—NCA and NASM astro-consumer clinic: "Binoculars! Telescopes! Astronomy!" NASM, Milestones of Flight Gallery. See page 6.

**Sunday, July 28, 1:00 PM**—GSFC public lecture: subject and speaker to be determined. See June listing.

**Monday, July 29, Night**—Delta Aquarid meteor shower peak. Also good several nights before and after.

**Mondays, August 5, 12, 19, and 26, 8:30 PM**—USNO public nights. See June listing.

**Monday, August 5 and Tuesday, August 20, 9:00 PM**—UMD Observatory open house. See June listing.

**Wednesday, August 7**—July "Sky Watch" column appears in *The Washington Post* "Style" section. It lists many events for that month.

**Friday, August 9**—Premier of new IMAX movie, "Cosmic Voyage," in NASM Langley Theater. Details (recording): 202/357-1550 or 202/357-1686.

**Saturday, August 10, 9:00 PM**—NCA and NPS sky watching program: *Exploring the Sky*. See June listing.

**Sunday, August 11, Night**—Perseid meteor shower peak. Also good several nights before and after.

**Thursday, Friday, and Saturday, August 15, 16, and 17, Dusk**—Young crescent Moon with Earthshine, conveniently situated for observation and enjoyment. See June listing.

**Saturday, August 17 or 24, Dusk**—(Civil twilight ends around 8:30 and 8:20 PM respectively.) Possible sky watching at Sky Meadow State Park, if enough NCA volunteers willing to conduct it. Otherwise, no August program. Information and Volunteering: Daniel Costanzo (NCA), 703/841-4765.

**Sunday, August 25, 1:00 PM**—GSFC public lecture: Stan Wojnar (Environmental Test Engineering & Integration Branch, GSFC), “Environmental Test Engineering & Integration.” See June listing.

**Wednesday, September 4**—September “Sky Watch” column appears in *The Washington Post* “Style” section. Lists many events for the month.

**Saturday, September 7, 7:30 PM**—September NCA meeting, speaker and topic to be announced in the September newsletter. Meeting also includes information on Comet Hale-Bopp.

**The Calendar’s Saturday “Deep Night” Periods**—There is no better place to experience the Universe

than at a dark-sky site during “deep night” periods. For many, Saturday nights represent the most convenient times to do that. Several relatively dark-sky sites are available for NCA members’ use in Maryland, Virginia, and West Virginia. Information: Daniel Costanzo, 703/841-4765. This deep night listing was prepared by Daniel Costanzo and Jay Miller.

Other events too numerous to mention here are listed in the publications *Sky & Telescope*, the *Astronomical Calendar 1996*, the *Observer’s Handbook 1996*, and in numerous software packages. NCA members can purchase all these at a discount. To join NCA, use membership application on page 7.

## Comet Hale-Bopp Countdown

*By Daniel Costanzo*

The incredible Comet Hyakutake has come and gone from our Springtime skies. But not to be forgotten is Comet Hale-Bopp, last Summer’s big comet discovery, and next year’s comet spectacular (hopefully).

While slowly and inexorably chugging Sunward, Comet Hale-Bopp has also been slowly increasing in brightness, and behaving quite well following predictions to that effect. Given its still considerable distance from the Sun, that’s a sure sign Hale-Bopp is cooking under increasing Solar warming, and encourages optimistic predictions of a bright 1997 appearance. It is now clearly, though faintly, visible in binoculars in predawn skies from dark-sky sites, and even sports a hint of a tiny tail. This Summer the comet begins becoming relatively easy to see in small telescopes and binoculars. Here is a brief guide for Summer viewing.

This Summer will see the comet brighten to easy visibility in binoculars (and faint detectability to the unaided eye), as it moves into the Midnight sky. On July 4, Earth crosses the plane of the comet’s orbit and the appearance of an anti-tail is possible. However, the tail will be greatly foreshortened, making detection difficult in the now magnitude 6.3 comet. The comet reaches opposition around July 7th, hence becoming visible all night, and will be at magnitude 6.2 and 40 degrees up around 1 AM EDT from the National Capital area’s latitude. It then moves into the pre-

Midnight sky for very convenient viewing from the rest of the Summer into Fall. At the same time, Hale-Bopp will be moving slowly west-northwest against the background stars and delicately beautiful parts of the Milky Way.

The table below gives Hale-Bopp’s increasing brightness, in half magnitude increments of predicted total magnitude for the next several months. Included are the constellations the comet will be in. All distances below are given in astronomical units (AUs), the common unit of Solar System measurement, where 1 AU is Earth’s mean orbital distance from the Sun, or 149,597,870 kilometers (92,932,000 miles). During this period Hale-Bopp will enter the

Asteroid Belt proper (i.e. the main belt of the Asteroid Belt), which roughly speaking has an outer edge at 3.5 AU and an inner edge at 2.1 AU. So by Summer’s end in mid-September, the comet will be preparing to exit the Asteroid Belt proper.

The morning of July 23 - exactly a year to the night after the comet’s discovery as a faint, 11th magnitude puff well outside Jupiter’s orbit - will find Hale-Bopp just outside the Asteroid Belt’s outer edge (3.5 AU). And, now at magnitude 5.9, it will be easily visible in binoculars, and possibly even visible to the unaided eye, though with extreme difficulty.

*See HALE-BOPP, on page 5*

### Comet Hale-Bopp’s Increasing Brightness

1996 Calendar Date	Constellation	AU From Earth	Distance From Sun	Predicted Total Magnitude
May 30	Sagittarius	3.4	4.2	7.0
June 20	Sagittarius	3.1	4.0	6.5
July 5 (Opposition)	Scutum	2.9	3.9	6.2
July 14	Scutum	2.8	3.8	6.0
August 18	Ophiuchus	2.8	3.4	5.5
September 29	Ophiuchus	3.0	2.9	5.0

# February 1998 Caribbean Eclipse Trip Update

National Capital Astronomers, Inc., and Greenbelt Travel are planning a 5 day, 4 night trip to the Dutch Caribbean island of Curacao for the February 1998 eclipse. The projected price is about \$1000 per person, double occupancy. (Price may vary since airfare cannot be locked in this far in advance.) The price will include:

Roundtrip airfare for BWI.  
(Flights from other airports can be arranged.)

Hotel accommodations. The selected hotel has its own private beach and is located close to most of the island's major tourist attractions.

NASA Reference Publication 1383, "Total Solar Exlipse of 1998 February 26" , by Fred Espenak and Jay Anderson has recently been released. All weather and eclipse duration information in this article comes from that source. It is not yet posted on-line, but it should soon be available at <http://unmbra.nascom.nasa.gov/eclipse/980226/rp.html>

Weather prospects for Curacao are among the best for land-based observation, with 73% chance of sunshine, based on 22 years of climate data. (Curacao, along with Aruba and nearby parts of Columbia and Venezuela, is in an area that is anomalously dry and sunny.) High Cirrus clouds are found along the entire track, but it should be thin enough so as not to interfere with observations.

Curacao's location makes it a good choice for both those who want longest totality and those interested in edge effects. The elongated island (about 40 miles long, 8 miles wide, and oriented NW-SE) is perpendicular to the eclipse path. The island's point of longest totality (3 minutes 32 seconds) will be at the NW end, while the southern edge of the umbral path cuts across the SE end of the island.

The actual centerline is between Curacao and the neighboring island of Aruba. However, since totality duration changes very little as you move away from the centerline, maximum totality is only 11 seconds less than at the centerline. Our observing site will be as close as possible to the point of longest totality. This will be about 25 miles NW of the hotel. (Totality duration at the hotel is about 2 minutes.)

Several people have expressed interest in observing from the southern edge. It appears to be about 8 miles SE of the hotel, so this would be a short trip by rental car or taxi. To be added to the mailing list for this trip, see Sue Bassett at the meeting, or send a note to:

ATS-EC98  
P.O. Box 2509  
Laurel, MD 20709

# **Binoculars! Telescopes! Astronomy!**

## ***Astro-Consumer Clinic***

Summer season thoughts of Astronomy? Consumer beware! "Bargains" on binoculars and telescopes are just as risky as other "great deals." Learn to wisely choose, use, and care for astronomical instruments from NCA. Our experts are available **any time** between 10:00 a.m. and 4:00 p.m., with myth-breaking information, guidance, and demonstrations.

**Saturday, July 27**

**National Air & Space Museum**

**Milestones of Flight Gallery**

This workshop is a joint gift of NCA and the Smithsonian Institution, National Air and Space Museum (NASM). NCA volunteers are still needed! NASM can provide volunteers with free parking. Information: Daniel Costanzo (NCA), 703/841-4765; Cheryl Bauer (NASM), 202/357-1529.

The 10:00 a.m. starting time means this program begins as soon as the NASM Monthly Sky Lecture ends. So if you arrive at NASM by 9:30 a.m. you can also attend the lecture in the Albert Einstein Planetarium, and this program afterward in the Milestones of Flight Gallery.



**National  
Capital  
Astronomers,  
Inc.  
(NCA)**

*Serving  
Science & Society  
Since 1937*

*NCA member Daniel J. Costanzo. Photo by Chris Costanzo/Corcoran School of Art*

As indicated earlier, in July, Hale-Bopp will also pass through the densest part of the Milky Way band. This offers several opportunities for viewing the comet passing within five degrees or less of relatively bright deep-sky objects. (Five degrees represents what can be seen in a typical pair of binoculars, and is the typical angular distance separating two objects. That still puts them reasonably well placed in the field-of-view of a typical pair of binoculars.) All dates of closest angular approach are calendar dates. Thus, July 8 means the night of 1996 July 8/9. And the closest approach Hale-Bopp makes to these deep-sky objects is also given:

July 8	M26 (open cluster)	1.7°
July 15	NGC 6649 (open cluster)	<0.1°
July 22	M16 (Eagle Nebula)	4.1°

Hale-Bopp will also pass by Jupiter in the sky, but at an angular distance significantly beyond five degrees from the giant planet, meaning both will not be able to be placed in a typical pair of binocular's field-of-view.

Those wishing further information on Comet Hale-Bopp via the World Wide Web can access NCA's home page <http://myhouse.com/NCA/home.htm>. Those wishing further information via telephone recordings can call *Sky & Telescope* magazine's "Skyline" (617/497-4168). *Sky & Telescope* magazine also provides information and high quality finder charts.

Those interested in doing photography and electronic imaging should contact NCA member Bob Bolster for practical advice (Phone: 703/960-9126, E-Mail address for Bob Bolster: [73257.507@compuserve.com](mailto:73257.507@compuserve.com)). He is quite knowledgeable in those fields. Bob can also provide customized listings and charts of comet positions, and viewing times for visual and other observing.

Information and data for this article was obtained and generated by NCA members Walter Nissen and Bob Bolster, with other information coming from the 1995 July 28 "Skyline."



## Galileo Watch

By Daniel Costanzo

Last December, NASA's main Galileo spacecraft (the Galileo orbiter) dropped a probe into Jupiter's atmosphere, then settled into a long, looping orbit around the giant planet. Galileo has returned no pictures of the Jovian system yet. But the first ones will be taken starting this Summer as the craft passes about 500 kilometers from Jupiter's Galilean moon Ganymede on June 27th. Shortly after that, Galileo will begin radioing to Earth a long data stream of spectacular images and other data. Fourteen other flybys of Jupiter's Galilean moons are planned through the end of 1997.

If you have access to the Internet you can access full updates and results via the Galileo Project home page at:

<http://www.jpl.nasa.gov/galileo>

If you have cable television you may access the NASA Channel (NTV) for full updates and results. (If your cable provider doesn't give NTV then extol them to do so. It makes the monthly cable fee all the more justifiable.)

If you subscribe to *Sky & Telescope* magazine, you will also get full updates and results in snappy articles.

If you wish weekly updates and results via telephone recordings, you can call *Sky & Telescope* magazine's "Skyline" (617/497-4168). Happy Galileo watching!



## LeRoy Elseworth Doggett (1941 — 1996)

The astronomical community lost one of its experts on astronomical phenomena and the history of astronomy with the passing of Dr. LeRoy E. Doggett on April 16, 1996. Dr. Doggett developed an early interest in astronomy while growing up in Marshalltown, Iowa. He went on to study astronomy at the University of Michigan and at North Carolina State University. Employed by the Nautical Almanac Office at the U.S. Naval Observatory since 1965, he served as its Chief from 1990-1994. Although his regular duties included participation in the preparation of the *Astronomical Almanac* each year, he also helped to develop USNO's Interactive Computer Ephemeris (ICE) and its successor, the Multiyear Interactive Computer Almanac (MICA), now widely employed by PC and Macintosh users to compute astronomical phenomena. His interest in the history of astronomy led to membership in the Historical Division of the American Astronomical Society (AAS), for which he was serving as Secretary/Treasurer at the time of his death. He was also a member of the AAS Division on Dynamical Astronomy and of the International Astronomical Union.

NCA members will remember Dr. Doggett for his participation in our June 1994 meeting, where he reviewed the history of astronomical computing and

demonstrated the use of MICA. I will miss LeRoy Doggett as a personal friend of many years.

Wayne H. Warren, Jr.

### Newsletter Deadline for September *Star Dust* AUGUST 15, 1996

\*\*\* DO NOT BE LATE!!! \*\*\*

We need everyone to work together. Please send your submissions in on time so that all NCA members will receive newsletters on time. Send your submissions to Gary & Alisa Joaquin, at 7821 Winona Ct., Annandale, VA, 22003. Leave a message on voice mail 703/750-1636 or send an ASCII file via e-mail at our NEW address: [ajglj@erols.com](mailto:ajglj@erols.com). You can still continue to fax to 703/658-2233. We now have a modem on both our Mac and PC to receive information more easily. Submissions must be on time or they may not get in.

To submit articles to link up with NCA's web address, send e-mail to Harold Williams at [haroldw@umd5.umd.edu](mailto:haroldw@umd5.umd.edu). To link to the web directly: <http://myhouse.com/NCA/home.htm>.

ASTRO, from page 1

today's scientific research. We who are involved in astronomy and other areas of science, at either a full- or part-time level, are the only ones who can do this, and do it we must, or we may soon see the collapse of many of our scientific activities. Come join other NCA members and guests to celebrate this year's science fair winners and to learn how we can help to educate the public and our political leaders about the absolutely essential role that science support plays in determining the future of our country and of the whole world. ☼

## IAU Symposium No.179 New Horizons from Multi-Wavelength Sky Surveys

The Space Telescope Science Institute and the Johns Hopkins University are co-hosting the next major meeting to be organized by the International Astronomical Union (IAU) Working Group on Wide Field Imaging. This will be held August 26th-30th 1996, in Baltimore, Maryland. Current sessions for discussion are listed below by day and session number:

- Day 1: 1a) Sky Surveys Across The Spectrum: The Longer Wavelengths  
2a) Waveband-Independent Considerations
- Day 2: 1b) Sky Surveys Across The Spectrum: The Shorter Wavelengths (cont.)  
2b) Waveband-Independent Considerations (cont.)
- Day 3: Selected Sky-Survey and Astrophysics Topics
- Day 4: 3a) Innovative New Galactic Astronomy  
4) Data Processing and Information Management
- Day 5: 3b) Innovative Extragalactic Astronomy  
5a) Business Matters  
5b) Concluding Session

To register, contact Dr. B. Lasker, Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21212 or e-mail: lasker@stsci.edu.

## NCA Welcomes New Members

**Bob Braunohler**  
2101 Yorktown Road, NW  
Washington, DC 20012-2248

**Daniel Merl Ellis**  
831 Berryville Ave.  
Winchester, VA 22601

**Howard Mostov**  
P.O. Box 45039  
Washington, DC 20026

**J. L. Olsen**  
4701 Willard Ave., Apt. 1121  
Chevy Chase, MD 20815-4623

**Jerry Lee Silvius**  
3121 Beltsville Road  
Beltsville, MD 20705-3302

**Joyce H. Woodford**  
19006 Quail Valley Blvd.  
Gaithersburg, MD 20879

We apologize to Douglas J. McNaughton and Lisa Nemeč for misspelling their names in the list of new members in last month's *Star Dust*.

## Attention All NCA Junior Members

Without having school homework to do this summer, you will have more time to spend on your astronomy hobby. Let me remind you again that NCA has a mentor program for its Junior members. Any Junior desiring help with an astronomy project may call me for referral to an adult member who has expertise in his or her particular interests. If you call me (at 301/564-6061), I'll be happy to try to find a mentor whom you may contact when you need assistance. Please don't be timid about calling. We are eager to help you. All Juniors, including youngsters in homes with NCA family members, qualify for this help.

Leith Holloway  
Director of NCA Junior Division



## Planetarium Events

**Einstein Planetarium**—Smithsonian Institution, NASM, Washington, DC. "The Stars Tonight," Daily at 3:00 pm. Call 202/357-1550 or 202/357-1686 for a detailed list of all events.

"The New Solar System." Thirty minutes long. Daily at 11:00 am to 5:00 pm.

"SkyQest," Daily (Beginning June 22) at 11:00 am to 5:00 pm.

**Monthly Sky Lectures:** "The Smithsonian's Sun," with David Devorkin, Saturday June 1, 9:30 am.

Title To Be Announced (TTBA), Tilak Hewagama, July 6, 9:30 am.

TTBA, John Miles, August 3, 9:30 am,

TTBA, Jim Zimbelman, September 7, 9:30 am,

**Family Star Watches:** "Bootes & Friends," Cheryl Bauer, June 15, 10:00 am.

TTBA, Geoff Chester, July 20, Dusk.

TTBA, Jim Sharp, August, 17, 10:00 am.

**Exploring Space Lecture:** "The Sky Is Falling: Impacts and Their Role in Planetary Evolution," Eugene Shoemaker (codiscoverer of Comet Shoemaker-Levy 9), Wednesday, June 12, 7:30 pm.

**Rock Creek Park Nature Center Planetarium**— Washington, DC. Wednesdays, 3:45 pm; Saturdays & Sundays 1:00 pm & 4:00 pm, 202/426-6829.

**Arlington Planetarium**—"Stars Tonight for June." Outside observing follows (weather permitting). Monday, June 3, 7:30 pm, 703/358-6070.

## National Capital Astronomers, Inc.

### SERVING SCIENCE & SOCIETY SINCE 1937

NCA is a non-profit, membership supported, volunteer run, public-service corporation dedicated to advancing space technology, astronomy, and related sciences through information, participation, and inspiration, via research, lectures, presentations, publications, expeditions, tours, public interpretation, and education. NCA is the astronomy affiliate of the Washington Academy of Sciences. All are welcome to join NCA. For information: 301/320-3621 or 703/841-4765.

### SERVICES & ACTIVITIES:

**Monthly Meetings** feature presentations of current work by researchers at the horizons of their fields. All are welcome; there is no charge. See monthly *Star Dust* for time and location.

**NCA Volunteers** serve as skilled observers frequently deploying to many parts of the National Capital region, and beyond, on campaigns and expeditions collecting vital scientific data for astronomy and related sciences. They also serve locally by assisting with scientific conferences, judge science fairs, and interpreting astronomy and related subjects during public programs.

**Discussion Groups** exchange information, ideas, and questions on preselected topics, moderated by an NCA member or guest expert.

**Publications** received by members include the monthly newsletter of NCA, *Star Dust*, and an optional discount subscription to *Sky & Telescope* magazine.

**NCA Information Service** answers a wide variety of inquiries about space technology, astronomy, and related subjects from the public, the media, and other organizations.

**Consumer Programs** on selection, use, and care of binoculars and telescopes, provide myth-breaking information, guidance, and demonstrations for those contemplating acquiring their first astronomical instrument.

**Dark-Sky Protection Efforts** educate society at large about the serious environmental threat of light pollution, plus seek ways and means of light pollution avoidance and abatement. NCA is an organizational member of the International Dark-Sky Association (IDA), and the National Capital region's IDA representative.

**Classes** teach about subjects ranging from basic astronomy to hand-making a fine astronomical telescope. NCA's instructors also train educators in how to better teach about space technology, astronomy, and related sciences.

**Tours** travel to dark-sky sites, observatories, laboratories, museums, and other points of interest around the National Capital region, the Nation, and the World.

**Discounts** are available to members on many publications, products, and services, including *Sky & Telescope* magazine.

**Public Sky Viewing Programs** are offered jointly with the National Park Service, the Smithsonian Institution, the U.S. Naval Observatory, and others.

**NCA Juniors Program** fosters children's and young adults' interest in space technology, astronomy, and related sciences through discounted memberships, mentorship from dedicated members, and NCA's annual Science Fair Awards.

**Fine Quality Telescopes** up to 36-cm (14-inch) aperture are available free for member's use. NCA also has access to several relatively dark-sky sites in Maryland, Virginia, and West Virginia.

### YES! I'D LIKE TO JOIN THE NATIONAL CAPITAL ASTRONOMERS

Enclosed is my payment for the following membership category:

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**Note:** If you already subscribe to *Sky & Telescope*, please attach a recent mailing label. You may renew this subscription through NCA for \$24 when it expires.

Make check payable to: **National Capital Astronomers, Inc.**, and send with this form to:

**NCA c/o Jeffrey B. Norman, 5410 Connecticut Avenue, NW, Apt. #717, Washington, D.C. 20015-2837.**

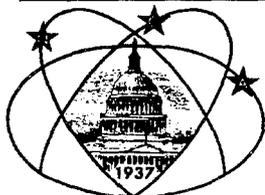
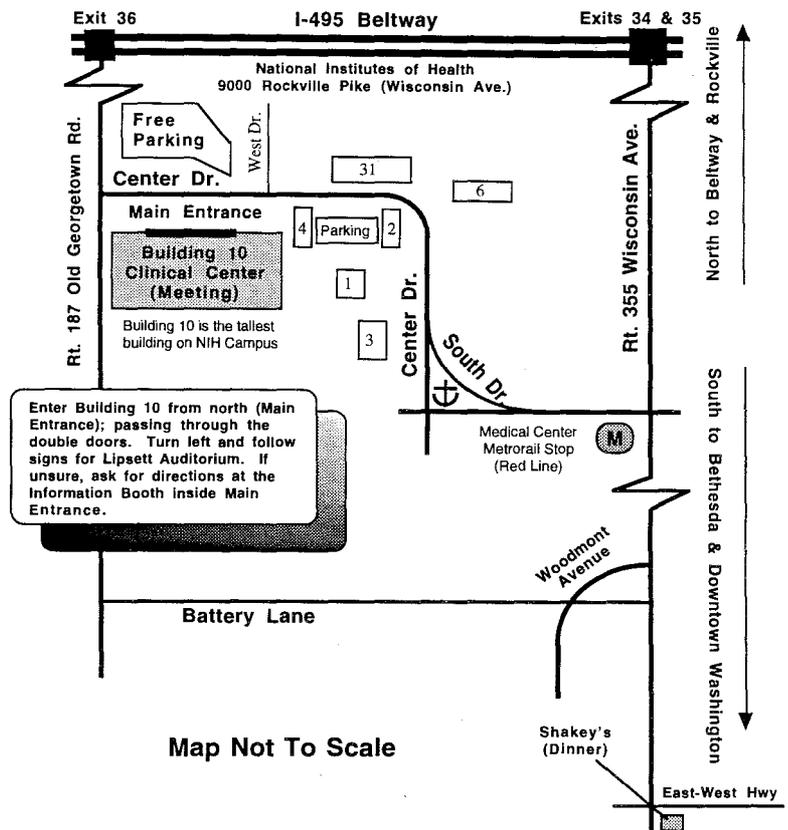
The following information is optional. Please indicate briefly any special interests, skills, education, experience, or other resources which you might contribute to NCA. **Thank you, and welcome to NCA!**

# Getting to the NCA Monthly Meeting

**Metrorail Riders**—From Medical Center Metro Stop: Walk down the hill, pass the bus stops and turn right at the anchor onto Center Drive. Continue uphill to Building 10 (walking time about 10 minutes), the tallest building on campus. Also, the J2 bus line connects the Bethesda (7:16 PM) and NIH (7:23 PM) Metro stops with Building 10 (7:25 PM).

**To Shakey's**—Take Wisconsin Avenue north or south to East-West Highway (Route 410). This is one-half block south of the Bethesda Metro stop. Shakey's is on the south side of 410 just east of Wisconsin. Free parking is available in lots directly across from the restaurant. Note that you don't have to eat pizza. Shakey's has a variety of other food, including sandwiches, salads, etc.

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