

# Star Dust

National Capital Astronomers, Inc.

March 2012

Volume 70, Issue 7

<http://capitlastronomers.org>

## Next Meeting

**When:** Sat. Mar. 10, 2012

**Time:** 7:30 pm

**Where:** UMD Observatory

**Speaker:** Jennifer Wiseman,  
NASA/GSFC

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## Directions to Dinner/Meeting

Members and guests are invited to join us for dinner at the Garden Restaurant located in the UMUC Inn & Conference Center, 3501 University Blvd E. The meeting is held at the UMD Observatory on Metzert Rd about halfway between Adelphi Rd and University Blvd.

## Need a Ride?

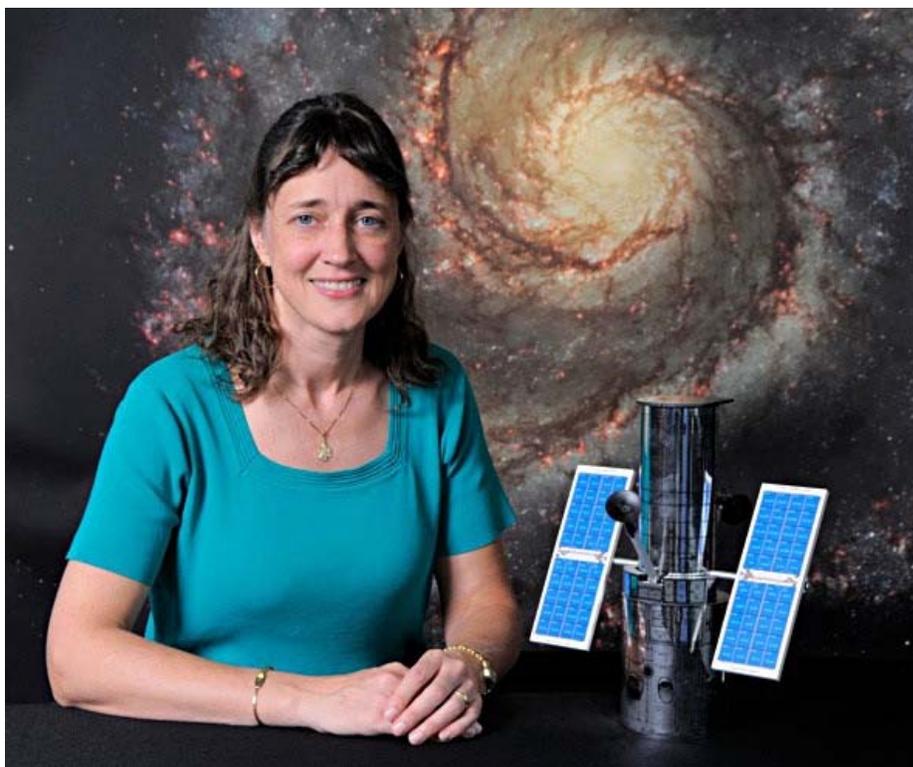
Please contact Jay Miller, 240-401-8693, if you need a ride from the metro to dinner or to the meeting at the observatory. Please try to let him know in advance by e-mail at [rigel1@starpower.net](mailto:rigel1@starpower.net).

## Observing after the Meeting

Following the meeting, members and guests are welcome to tour through the Observatory. Weather-permitting, several of the telescopes will also be set up for viewing.

## March 2012: Jennifer Wiseman NASA Goddard Space Flight Center **The Birth of New Stars: Jets, Disks, and Planetary Systems**

**Abstract:** New star formation is active and vigorous in many galaxies, including our own. But just how large clouds of interstellar gas and dust transform into shining stars and even planetary systems has been largely a mystery due to the difficulty of observing tiny sources enshrouded in obscuring gas and dust. But new telescopes and technology are opening portals into the magnificent process of stellar birth. I will present striking new images of infant stars and their accompanying circumstellar dust disks, peering into the fragmenting gas clouds in which they form. During one spectacular phase, these "protostars" emit powerful bipolar exhaust jets -- plumes of gas shocking and disrupting the surrounding cloud even to distances of many light-years away. Space telescopes including the Hubble, Herschel, and Spitzer observatories, and ground-based radio telescope arrays, are together enabling these new views into the mystery of the birth of stars.



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Editor: Michael Chesnes

Editorial Advisors:

Elizabeth Warner  
 Jeffrey Norman  
 Wayne Warren  
 Harold Williams  
 John D. Gaffey, Jr.  
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PDF Distributor: Jay Miller

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Thank you!

## Reminder

After the meeting, everyone is invited to join us at Plato's Diner in College Park. Plato's is located at 7150 Baltimore Ave. (US Rt. 1 at Calvert Rd.), just south of the university's campus. What if it's clear and you want to stick around and observe? No problem -- just come over when you're through. This is very informal, and we fully expect people to wander in and out.

Continued from Page 1

**Biography:** Dr. Jennifer Wiseman is the Senior Project Scientist for NASA's Hubble Space Telescope at the Goddard Space Flight Center, where she previously headed the Laboratory for Exoplanets and Stellar Astrophysics. Wiseman received a bachelor's degree in physics from the Massachusetts Institute of Technology and a doctorate in astronomy from Harvard University. While a student, she co-discovered the comet 114P/Wiseman-Skiff. She conducted postdoctoral research in star formation as a Jansky Fellow at the National Radio Astronomy Observatory and as a Hubble Fellow at the Johns Hopkins University. Dr. Wiseman is also interested in the interface of science and society. She was the 2001-2002 Congressional Science Fellow of the American Physical Society and served with staff of the Committee on Science of the U.S. House of Representatives. She is a councilor for the American Astronomical Society, and she currently directs the Dialogue on Science, Ethics, and Religion for the American Association for the Advancement of Science.

## New Lathe for ATM Class

*Michael Chesnes*



The National Capital Astronomers class on Amateur Telescope Making at the Chevy Chase Community Center (Connecticut Ave. and McKinley St. NW) recently acquired an Austrian-made Emco Maximat V-10 lathe from a local donor. The lathe comes with a milling head, and is similar to Emco's smaller and better-known Unimat 3-in-1 lathe/mill/drill machines. After looking up the lathe on machinist websites, it appears to be about 40 years old, making it several decades younger than the WWI era South Bend lathe at the ATM class. This new machine tool will add to the range of projects which NCA's more skilled amateur telescope makers will be able to undertake, including telescope parts such as mirror cells which they previously either purchased or made from wood. The lathe weighs about 300 lbs. and took five people to move.

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[j.c.morris@verizon.net](mailto:j.c.morris@verizon.net)  
 703-620-0996 (h)  
 703-983-5672 (w)

### Vice-President:

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[jshgwave@yahoo.com](mailto:jshgwave@yahoo.com)  
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[j.c.morris@verizon.net](mailto:j.c.morris@verizon.net)

*Telescope Making*  
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[gfbrendenburg@yahoo.com](mailto:gfbrendenburg@yahoo.com)  
 202-635-1860

*NCA Webmaster*  
 Harold Williams  
[Harold.Williams@montgomerycollege.edu](mailto:Harold.Williams@montgomerycollege.edu)  
 240-567-1463 (w)  
 301-565-3709 (h)

*Meeting Facilities*  
 Jay H. Miller  
[rigel1@starpower.net](mailto:rigel1@starpower.net)  
 240-401-8693

*Star Dust Editor*  
 Michael Chesnes  
[m.chesnes@verizon.net](mailto:m.chesnes@verizon.net)  
 301-313-0588

# Come See the Stars! Exploring the Sky

## 2012 Schedule

Date	Time	<u>Things of Interest</u>
4/21	8:30 PM	Winter constellations; Lyrid meteor shower
5/19	9:00 PM	Venus, Mars, and Saturn; the Beehive in Cancer
6/05	6:00 PM	Transit of Venus (solar observing)
6/16	9:00 PM	Solstice 6/20; Mars and Saturn
7/21	9:00 PM	Summer Triangle; Moon passing near Regulus
8/18	8:30 PM	Mars and Saturn near Spica; Andromeda rising
9/15	8:00 PM	Cassiopeia level with Polaris; equinox next week
10/20	7:30 PM	Astronomy Day; Orionid meteor shower
11/03	7:00 PM	Pleiades and winter constellations appear

*Exploring the Sky* is an informal program that for over sixty years has offered monthly opportunities for anyone in the Washington area to see the stars and planets through telescopes from a location within the District of Columbia.

Sessions are held in Rock Creek Park once each month on a Saturday night from April through November, starting shortly after sunset. We meet in the field just south of the intersection of Military and Glover Roads NW, near the Nature Center. A parking lot is located next to the field.

Beginners (including children) and experienced stargazers are all welcome – and it's free!

Questions? Call the Nature Center at (202) 895-6070 or check the Internet sites:

<http://www.nps.gov/rocr/playourvisit/expsky.htm>  
<http://www.capitalastronomers.org>

A presentation of the National Park Service and National Capital Astronomers

## ***The City Dark Recap***

*Michael Chesnes*

On Saturday, February 25, I volunteered with NCA members Joe Morris, James Roy, Andrew Seacord, and Harold Williams at George Mason University's Founders Hall in Arlington, VA. NCA was one of the organizations, along with the Northern Virginia Astronomy Club and the International Dark Sky Association, which helped The Friends of Arlington's Planetarium cohost a public screening of the light pollution documentary *The City Dark*, which drew about 200 attendees.



NCA President Joe Morris was one of the introductory speakers for the film, while Montgomery College astronomy professor and planetarium director Harold Williams participated in a panel discussion on light pollution afterwards.

The other NCA volunteers at the event staffed an NCA table to greet attendees and promote our organization, and set up telescopes for members of the public to observe after the panel discussion. I especially liked James Roy's replica of one of Galileo's refractors.

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## Occultation Notes

D following the time denotes a disappearance, while R indicates that the event is a reappearance.

When a power (x; actually, zoom factor) is given in the notes, the event can probably be recorded directly with a camcorder of that power with no telescope needed.

The times are for Greenbelt, MD, and will be good to within +/-1 min. for other locations in the Washington-Baltimore metropolitan areas unless the cusp angle (CA) is less than 30 deg., in which case, it might be as much as 5 minutes different for other locations across the region.

Some stars in Flamsteed's catalog are in the wrong constellation, according to the official IAU constellation boundaries that were established well after Flamsteed's catalog was published. In these cases, Flamsteed's constellation is in parentheses and the actual constellation is given in the notes following a /.

Mag is the star's magnitude.

% is the percent of the Moon's visible disk that is sunlit, followed by a + indicating that the Moon is waxing and - showing that it is waning. So 0 is new moon, 50+ is first quarter, 100+ or - is full moon, and 50- is last quarter. The Moon is crescent if % is less than 50 and is gibbous if it is more than 50.

Cusp Angle is described more fully at the main IOTA Web site.

Sp. is the star's spectral type (color), O,B,blue; A,F,white; G,yellow; K,orange; M,N,S,C red.

Also in the notes, information about double stars is often given. "Close double" with no other information usually means nearly equal components with a separation less than 0.2". "mg2" or "m2" means the magnitude of the secondary component, followed by its separation in arc seconds ("), and sometimes its PA from the primary. If there is a 3rd component (for a triple star), it might be indicated with "mg3" or "m3". Double is sometime abbreviated "dbl".

Sometimes the Watts angle (WA) is given; it is aligned with the Moon's rotation axis and can be used to estimate where a star will reappear relative to lunar features. The selenographic latitude is WA -270. For example, WA 305 - 310 is near Mare Crisium.

## Mid-Atlantic Occultations and Expeditions

David Dunham

### Asteroidal and Planetary Occultations

Date	Day	EST	Star	Mag.	Asteroid	dmag	s	Ap.	Location
Mar 10	Sat	23:20	SAO 112952	9.7	Mnemosyne	2.8	7	4	WV,nVA,DC,sMD,DE
*** Dates and times above are EST, those below are EDT ***									
Mar 15	Thu	22:26	2UC43581695	13.1	2003 WL7	7.7	4	9	TNO N.America
Mar 23	Fri	23:18	2UC40992662	13.1	Pompeja	1.3	6	9	OH,MD,nVA,DC
Mar 25	Sun	5:45	2UC25181376	12.6C	Arsinoe	0.8	6	10	OH,VA,DC,MD
Apr 2	Mon	3:48	TYC68281704	10.2	Karin	6.4	2	5	swPA,MD,DE;nVA?
Apr 5	Thu	5:20	TYC73040882	10.5	Pulcova	2.8	15	6	MD,DC,VA,NC,SC

### Lunar Grazing Occultations (\*, Dunham plans no expedition)

Date	Day	EST	Star	Mag.	% alt	CA	Location
Mar 28	Wed	20:22	SAO 76975	8.6	32+ 53	12N	*Fredericksburg, VA; Sun -11
Mar 30	Fri	22:27	SAO 96301	8.3	52+ 47	14N	*Westminster & Baltimore, MD
Apr 2	Mon	2:10	ZC 1320	6.7	74+ 20	12N	*Huntington, WV; Roanoke, VA

Interactive detailed maps at <http://www.timerson.net/IOTA/> Under Location, if two numbers are given, the first is the distance of the northern (for cusp angles, or CA, with N) or southern (for CA with S) limit (the graze line) from Greenbelt, MD and the second number is the bearing (azimuth) of that distance in deg.

### Total Lunar Occultations

DATE	Day	EST	Ph	Star	Mag.	% alt	CA	Sp.	Notes
Mar 10	Sat	1:26	R ZC	1845	6.5	95- 41	48N	G8	AA 321,mg2 9,30",PA300d
Mar 10	Sat	22:55	R SAO	158128	7.5	89- 16	71S	K5	
Mar 10	Sat	23:17	R SAO	158141	7.7	89- 19	87S	M1	
*** Dates and times above are EST, those below are EDT ***									
Mar 15	Thu	4:42	R SAO	185961	7.5	46- 17	77S	G5	
Mar 15	Thu	6:14	R ZC	2588	7.0	46- 26	62S	O7	
Mar 15	Thu	6:34	R SAO	186053	7.5	46- 27	72S	B0	Sun alt. -9 deg.
Mar 15	Thu	6:48	R SAO	186069	7.4	46- 28	50S	B1	Sun -7
Mar 16	Fri	6:23	R xi 1	Sgr	5.0	35- 24	89N	B9	Sun -11, ZC 2757
Mar 16	Fri	6:40	R ZC	2760	6.9	35- 26	37N	O7	Sun -8
Mar 18	Sun	6:00	R ZC	3027	6.9	17- 12	66M	B2	Az 119
Mar 27	Tue	21:35	D 53	Tauri	5.5	24+ 30	68N	M9	ZC 633, close double?
Mar 27	Tue	22:36	D ZC	642	6.8	24+ 19	87N	F5	close double??
Mar 27	Tue	22:52	D SAO	76565	7.1	24+ 16	41N	F8	
Mar 27	Tue	23:06	D ZC	646	6.1	25+ 13	43S	M0	Az 287,mg2 8.4,sep 2"
Mar 27	Tue	23:33	D ZC	651	6.0	25+ 8	86S	B8	Az 290, close double?
Mar 28	Wed	19:36	D 105	Tauri	5.8	32+ 61	65N	B2	Sun -3,ZC 766,double??
Mar 28	Wed	23:16	D ZC	782	7.2	33+ 20	47S	A2	
Mar 29	Thu	23:43	D SAO	77983	7.1	43+ 24	67N	K2	
Mar 30	Fri	0:52	D SAO	78049	7.6	43+ 11	66S	O6	Az 287
Mar 30	Fri	22:58	D ZC	1060	7.3	53+ 41	73N	K2	close double?
Mar 31	Sat	1:51	D SAO	96439	7.3	54+ 9	80S	A2	Az 287
Apr 1	Sun	0:42	D ZC	1190	7.2	63+ 29	57S	A2	close double?
Apr 1	Sun	2:11	D 1	Cancri	5.8	64+ 12	65S	K3	Az 280, ZC 1197
Apr 1	Sun	22:53	D 45	Cancri	5.6	73+ 55	35S	A3	ZC 1309, close double?
Apr 3	Tue	20:12	D RX	Sex	6.7	89+ 41	88S	A3	Sun -8, ZC1528
Apr 3	Tue	21:18	D SAO	118314	7.4	90+ 50	55S	K0	mag2 9,sep. ".5,PA 130
Apr 4	Wed	0:21	D ZC	1543	6.6	90+ 48	36S	K0	
Apr 4	Wed	20:10	D ZC	1639	7.1	95+ 28	22S	F8	Sun -8,TmD 13,mg2 8,10"
Apr 4	Wed	23:12	D ZC	1655	6.8	96+ 49	74S	A5	
Apr 5	Thu	2:40	D 87	Leonis	4.8	96+ 31	72S	K4	ZC 1670
Apr 9	Mon	4:28	R ZC	2212	6.2	90- 29	65N	A3	
Apr 12	Thu	4:05	R ZC	2704	5.9	62- 22	29S	A5	close double??
Apr 12	Thu	5:03	R ZC	2708	5.9	62- 27	74N	G5	
Apr 13	Fri	4:36	R ZC	2863	6.1	51- 21	18S	F0	
Apr 14	Sat	5:42	R ZC	2995	6.1	40- 26	81N	K1	Sun-10, close double

Explanations & more information is at <http://iota.jhuapl.edu/exped.htm>. David Dunham, [dunham@starpower.net](mailto:dunham@starpower.net), phone 301-526-5590; 011-7-916-0929487 after March 17. Equipment and even telescopes can be loaned for most expeditions that we actually undertake; we are always shortest of observers who can fit these events into their schedules, so we hope that you might be able to. Information on timing occultations is at: <http://iota.jhuapl.edu/timng920.htm>.

*Thank you Nancy Grace Roman  
for finding this article.*

## Solving the Puzzle of Snow White

Based on article by Michael Brown in  
*Astronomy Beat*  
From the  
Astronomical Society of the Pacific

In a search for members of the Kuiper Belt Michael Brown and his graduate student, Meg Schwamb discovered a bright object currently designated 2007 OR10. Why was it so bright? Eris is brighter but it is covered with frost. 2007 OR10, nicknamed Snow White, seems to be too small to hold a gaseous atmosphere and thus too small to be frost covered. Another dwarf planet, Haumea is not only very bright but had broken into a number of pieces. Could the new object be one of those pieces? It was not close to the other pieces that were near one another but it is possible that a collision had blasted it away. The primary characteristic of Haumea is that it is very white because it is essentially pure ice.

Is Snow White white? No. It is the reddest object known in the Kuiper Belt. Hence it cannot be part of Haumea. It next presented another surprise. New brightness measurements indicated that it was twice as bright as in the previous estimates. Kuiper Belt objects do not brighten suddenly. Various hypotheses were suggested to explain how it could have brightened so much.

Unfortunately, the explanation was more mundane. The earlier brightness measurements were wrong. The earlier observations had been made under poor sky conditions. Other brightness measurements made under such conditions had been reasonably accurate. These were not. The brighter magnitude is correct.

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The sky was particularly transparent that evening, and observing conditions were about as good as they can get in downtown Arlington. I brought my 10 in. f4.5 Dobsonian, and gave at least 30 people views of the Orion Nebula, the core of which was visible in spite of our location close to a number of unshielded street lights. Photos are courtesy of Elizabeth Suckow, who volunteered with me.



### Science Fairs March 17

Please let Jay Miller [rigel1@starpower.net](mailto:rigel1@starpower.net) and Joe Morris [j.c.morris@verizon.net](mailto:j.c.morris@verizon.net) know if you are interested in judging these science fairs.

ScienceMONTGOMERY is at Reckord Armory at the University of Maryland. Grade 9-12 judging is from noon to 3 PM and grades 6-8 is from 2:30-5 PM. <http://www.sciencemontgomery.org/>

The Fairfax County Regional Science & Engineering Fair is at Robinson Secondary School. Check in is at 8 AM, orientation is from 8:45-9 AM and judging is from 9-12. [http://www.fcps.edu/is/science/science\\_fair/index.shtm](http://www.fcps.edu/is/science/science_fair/index.shtm)

The Prince George's Area Science Fair will be at Prince George's Community College in Largo, Maryland. Category Judges are needed from 7:45 am to 1:00 pm, and Grand Award Judges from 1:30 to 5:30 pm. <http://www1.pgcps.org/howardbowens/forms.aspx?ekfrm=77948>

### Calendar of Events

**NCA Mirror- and Telescope-making Classes:** Tuesdays Mar. 6, 13, 20, 27 and Fridays, Mar. 2, 9, 16, 23, 30, 6:30 to 9:30 pm at the Chevy Chase Community Center, at the northeast corner of the intersection of McKinley Street and Connecticut Avenue, N.W. Contact instructor Guy Brandenburg at 202-635-1860 or email him at [gfbrandenburg@yahoo.com](mailto:gfbrandenburg@yahoo.com). In case there is snow, call 202-282-2204 to see if the CCCC is open.

**Open house talks and observing** at the University of Maryland Observatory in College Park on the 5th and 20th of every month at 8:00 pm (Nov.-Apr.) or 9:00 pm (May-Oct.). There is telescope viewing afterward if the sky is clear.

**Dinner:** Saturday, Mar. 10 at 5:30 pm, preceding the meeting, at the [Garden Restaurant](#) in the University of Maryland University College Inn and Conference Center.

**Howard B. Owens Science Center Planetarium:** Friday, Mar. 9 at 7:30 pm. 9601 Greenbelt Road, Lanham, MD (301) 918-8750 [howardb.owens@pgcps.org](mailto:howardb.owens@pgcps.org) "Fancy Nancy: Stellar Star Gazer" Also check out "Science Myth Busters" family event at the Owens on Friday, Mar. 23 from 6:00 to 8:30 pm.

**Montgomery College Planetarium:** Monday, Mar. 19 at 7 pm. 7621 Fenton Street, Takoma Park, MD (240) 567-1463. "[Vernal Equinox: First Day of Spring](#)"

**Mid Atlantic Senior Physicists Group** talk on Wednesday, Mar. 28, at 1:00 pm at the American Center for Physics, 1 Physics Ellipse, College Park. Dr. Harold A. Williams, Montgomery College. "The Physics of Star Formation"

**Upcoming NCA Meetings** at the University of Maryland Observatory:

- Mar 10, 2012 **Jennifer Wiseman** (GSFC) - The Birth of New Stars: Jets, Disks, and Planetary Systems
- Apr 14, 2012 **Stella Kafka** (DTM) - Binaries in the Kuiper Belt
- May 12, 2012 **Soebur Razzaque** (GMU) - Neutrino Astronomy

### National Capital Astronomers Membership Form

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Academic Degrees: \_\_\_\_\_ Field(s) of Specialization: \_\_\_\_\_

Employer or Educational Institution: \_\_\_\_\_

Student Membership: ..... \$ 5

Standard Individual or Family Membership: ..... \$10

Optional additional contribution to NCA: ..... \$ \_\_\_\_\_

Total Payment (circle applicable membership category above): ..... \$ \_\_\_\_\_

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Please mail this form with check payable to National Capital Astronomers to:  
Michael L. Brabanski, NCA Treasurer; 10610 Bucknell Drive; Silver Spring, MD 20902

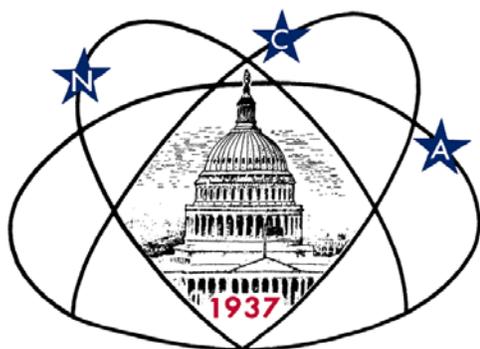
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**First Class**

**Dated Material**



Next NCA Mtg:

**Mar. 10**

**7:30 pm**

**@ UMD Obs**

**Dr. Jennifer**

**Wiseman**

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