Cape Fear Skies

The Official Newsletter of the
Cape Fear Astronomical Society
Wilmington, North Carolina

A Member Society of the Astronomical League

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www.capefearastro.org

CAPE FEAR ASTRONOMICAL SOCIETY
WILMINGTON, NORTH CAROLINA

This Month's Meeting – Sunday, May 6, 2007

Bryan Auditorium in Morton Hall
on the UNCW Campus

The business meeting of
the Cape Fear Astronomical Society
will begin at 7:00 pm.
The general meeting will begin at 7:45 pm.

Gastronomy!

Please join us for dinner before the meeting at India Mahal (Coupon in Attractions) on South College on at 5:15pm!

CAPE FEAR SKIES
Editor: Ric Longren
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CAPE FEAR ASTRONOMICAL SOCIETY
WILMINGTON, NORTH CAROLINA

Cape Fear Astronomical Society

Meeting minutes by Letisha McLaughlin CFAS Secretary

Meeting Minutes for April 1st CFAS Meeting

The Cape Fear Astronomical Society's April 2007 meeting was initiated at 7:10 PM in the Morton Hall Auditorium on the UNC Wilmington campus. The attendance for the night totaled 12 members and 0 visitors.

Officer's Report

Secretary Letisha McLaughlin announced she had been accepted into the graduate astrophysics program at North Carolina State University and would be attending in the fall of 2007. In addition, she was also invited back to Montana State University for the second summer to study solar physics.

President Ronnie Hawes recently celebrated a birthday on March 24th. Happy birthday Mr. President!

Treasurer Ben Steelman gave the monthly account status. The CFAS remains in the black with the checking balance now at $2,340.98. He also recommended moving a minimum of $500 to CD in order to gain interest. A motion to do so was both made and passed by the group.

Old Business

According to the constitution, March was the last month to pay member dues. If anyone has missed the deadline, he or she is no longer a member. Payment of dues is necessary to re-establish member privileges.

April 21, 2007 is this year's Astronomy Day. The club will be celebrating by holding a public observing event at Fort Fisher from 7:30 to 11:00 PM. The president has been given a permit to use the park by the airstrip. Members will also be allowed to park their vehicles by the site, but visitors must park in the designated areas. A few attendees discussed possibly posting the event on the WECT and WWAY event calendars.

The lock box from the Yamacraw observing site is in the possession of club member Tom Jacobs. He is currently working to return the box to working order.

New Business

John Guetta announced that a couple of shirt prices and options were omitted from the email sent to the club to inform everyone of the selection of CFAS accessories available for purchase.

President Ronnie Hawes suggested adopting a new way to select the monthly "Gastronomy" restaurant. He asked for member recommendations and in response received several. Next month, in May, the CFAS will be meeting at the India Mahal on S. College road.

Morton Hall auditorium is reserved for May, but has not been booked by the club for the second half of the year. Ronnie Hawes agreed to do this very soon.

The program for the night was given by Vice President Terry Herrin in the form of a DVD presentation. This was a last minute substitution for Tom Jacob's presentation, which has been postponed for the next April Fool's Day meeting.

News Cluster

- The next meeting of the Cape Fear Astronomical Society is May 6 starting at 7:00 pm.
- The Cape Fear Astronomy Society participated in a public viewing at Fort Fisher on Saturday April 21 in celebration of Astronomy Day 2007. There was a good membership turnout with ~8 scopes set up for public viewing. There were 100+ visitors in attendance with lines forming at each scope. It was very gratifying to see a child's face light up when viewing Saturn for the first time. Many visitors were very appreciative of club members sharing their time and equipment. **A big thank you to those members and family who attended!**
- Secretary Letisha McLaughlin announced she had been accepted into the graduate astrophysics program at North Carolina State University and would be attending in the fall of 2007. In addition, she was also invited back to Montana State University for the second summer to study solar physics. **Congratulations!! The club wishes you the very best. We'll miss you.**
- From Katy Haugland, Vice President of the Sidewalk Astronomers: "Many of you are familiar with the concept of sidewalk astronomy, started by John Dobson back in the 60's. We are taking his

vision a step further by organizing one night in which all amateurs around the world can set up their telescopes in public locations and offer free views of the night sky to the general public. Our goal is to get 1000 telescopes set up worldwide on May 19, 2007, and if each telescope operator lets 100 people look through their telescope, that will be 100,000 people who have gotten their first up close look at the rest of the universe. We would appreciate it if you could let us know in advance if and how many people will be participating, what their location will be (if known) and after the fact, approximately how many people looked through the telescopes". This would be right on the heels of Astronomy Day, but given the success of the Astronomy Day viewing, it may be worth pursuing.

Event Calendar for May 2007

May 2	Full Moon, 6:09 am, Mercury is in superior conjunction, midnight
May 5	Eta Aquarid meteor show peaks, weak for mid northern latitudes
May 6	**CFAS May Meeting 7:00 pm**
May 10	Last quarter Moon, 12:27 am
	Moon passes 1.8º south of Neptune, 4 am
May 11/12	**CFAS Group Viewing Sessions**
May 12	Moon passes 1.3º north of Uranus, 3 am
May 13	Mother's Day
May 15	Moon at perigee, 11:06 am, 233,315 miles
May 16	New Moon, 3:27 pm
May 17	Moon passes 3º north of Mercury, 8 pm
May 18/19	**CFAS Group Viewing Sessions**
May 19	Moon passes 1.7º north of Venus, 9 pm
May 27	Moon at apogee, 6:02 pm, 251,941 miles
May 28	Memorial Day Observed
May 31	Full (Blue) Moon, 9:04 pm

All times are EDT unless otherwise noted

News from Our Sister Society Down Under

Astronomical Society of Albury - Wodonga

For the latest news from down under, check out our sister society's web site at www.asaw.org.au.

Astronomical History During the Month of May

Date	Milestone
May 4, 1967	Launch of Lunar Orbiter 4, NASA's fourth moon-mapping mission and the first to orbit over the Moon's poles.
May 11, 1871	John Herschel, cataloger of deep sky objects and son of William Herschel, dies.
May 31, 1872	Charles Greeley Abbot, director of the Smithsonian Astrophysical Observatory who measured the energy output of the Sun, is born.

Planets in May 2007

Planet	May	Elong.	Mag.	Dia.	Illum.	Dist.
Mercury	1st	3º Mo	-2.0	5.1"	100%	1.329
	11th	9º Ev	-1.5	5.3"	92%	1.259
	21st	19º Ev	-0.6	6.2"	67%	1.076
	31st	23º Ev	+0.2	7.7"	42%	0.870
Venus	1st	42º Ev	-4.1	16.4"	68%	1.017
	11th	43º Ev	-4.2	17.7"	64%	0.941
	21st	44º Ev	-4.3	19.3"	60%	0.863
	31st	45º Ev	-4.4	21.3"	55%	0.783
Mars	1st	51º Mo	+1.0	5.3"	91%	1.774
	16th	54º Mo	+0.9	5.5"	90%	1.701
	31st	58º Mo	+0.9	5.7"	89%	1.628
Jupiter	1st	141º Mo	-2.5	43.8"	100%	4.506
	31st	173º Mo	-2.6	45.7"	100%	4.313
Saturn	1st	98º Ev	+0.4	18.4"	100%	9.011
	31st	70º Ev	+0.5	17.5"	100%	9.502
Uranus	16th	67º Mo	+5.9	3.4"	100%	20.470
Neptune	16th	93º Mo	+7.9	2.3"	100%	29.982
Pluto	16th	146º Mo	+13.9	0.1"	100%	30.444

Elong. – elongation from the Sun: morning (Mo) and evening (Ev)
Dist. – distance from Earth in astronomical units

EDITORS NOTE:

The latest club membership list shows the following members have not paid their Club dues for 2007:

Aaron Charles
Christen Christian/Patty Mason
Tom Craven
Murray W. Drake
Sam & Kathy Lipscomb
David Long
Ernie Mayo, Jr.
Jon Moon
Bob & Patsy Racine
Derek Scully
Christopher Suter
Victor Urbinati
James August Zanker

For those listed above this will be the last Newsletter you will receive unless your membership is restored.

NASA Spacecraft Make First 3-D Images of Sun

(www.jpl.nasa.gov)

NASA's twin Solar Terrestrial Relations Observatory (STEREO) spacecraft have made the first three-dimensional images of the sun. The new view will greatly aid scientists' ability to understand solar physics and thereby improve space weather forecasting.

"The improvement with STEREO's 3-D view is like going from a regular X-ray to a 3-D CAT scan in the medical field," said Michael Kaiser, the mission's project scientist at NASA's Goddard Space Flight Center, Greenbelt, Md.

The spacecraft were launched October 25, 2006. On January 21 they completed a series of complex maneuvers, including flying by the moon, to position the spacecraft in their mission orbits. The two observatories are now orbiting the sun, one slightly ahead of Earth and one slightly behind, separating from each other by approximately 45 degrees per year. Just as the slight offset between a person's eyes provides depth perception, the separation of spacecraft allows 3-D images of the sun. The new 3-D images are generated by NASA's Jet Propulsion Laboratory, Pasadena, Calif.

Violent solar weather originates in the sun's atmosphere, or corona, and can disrupt satellites, radio communication, and power grids on Earth. The corona resembles wispy smoke plumes, which flow outward along the sun's tangled magnetic fields. It is difficult for scientists to tell which structures are in front and which are behind.

"In the solar atmosphere, there are no clues to help us judge distance. Everything appears flat in the 2-D plane of the sky. Having a stereo perspective just makes it so much easier," said Russell Howard of the Naval Research Laboratory, Washington, the principal investigator for the Sun Earth Connection Coronal and Heliospheric Investigation suite of telescopes on the spacecraft.

"With STEREO's 3-D imagery, we'll be able to discern where matter and energy flows in the solar atmosphere much more precisely than with the 2-D views available before. This will really help us understand the complex physics going on," said Howard.

The mission's depth perception also will help improve space weather forecasts. Of particular concern is a destructive type of solar eruption called a coronal mass ejection. These are eruptions of electrically charged gas, called plasma, from the sun's atmosphere. A coronal mass ejection cloud can contain billions of tons of plasma and move at a million miles per hour.

Such a cloud is laced with magnetic fields, and coronal mass ejections directed toward Earth smash into our planet's magnetic field. If the coronal mass ejection magnetic fields have the proper orientation, they dump energy and particles into Earth's magnetic field. This causes magnetic storms that can overload power line equipment and radiation storms that disrupt satellites.

Satellite and utility operators can take precautions to minimize coronal mass ejection damage, but they need an accurate forecast of when one will arrive. To do this, forecasters need to know the location of the front of the coronal mass ejection cloud. STEREO will allow scientists to accurately locate the cloud front. "Knowing where the front of the CME [coronal mass ejection] cloud is will improve estimates of the arrival time from within a day or so to just a few hours," said Howard. "STEREO also will help forecasters estimate how severe the resulting magnetic storm will be."

"In addition to the STEREO perspective of solar features, STEREO for the first time will allow imaging of the solar disturbances the entire way from the sun to the Earth. Presently, scientists are only able to model this region in the dark, from only one picture of solar disturbances leaving the sun and reaching only a fraction of the sun-Earth distance," said Madhulika Guhathakurta, the mission's program scientist at NASA Headquarters, Washington.

New STEREO images are online at http://www.nasa.gov/mission_pages/stereo/news/stereo3D_press.html .

STEREO is the third mission in NASA's Solar Terrestrial Probes program within NASA's Science Mission Directorate, Washington. The Goddard Science and Exploration Directorate manages the mission, instruments, and science center. The Johns Hopkins University Applied Physics Laboratory, Laurel, Md., designed and built the spacecraft and is responsible for mission operations. The imaging and particle detecting instruments were designed and built by scientific institutions in the U.S., UK, France, Germany, Belgium, Netherlands, and Switzerland. JPL is a division of the California Institute of Technology in Pasadena.

Sudoku 10, 60, 150, 340, 530, 10

More Sudoku from easy to nearly impossible.

Complete the grid so every row, column and 3 x 3 box contains every digit from 1 to 9 inclusively. Stars indicate level of difficulty. Answers on page 7.

8	1	3			9	5		
7		4				9		3
	9			3		7	8	
		1	5		2		3	
	6	8	9		3	4	7	
	2		6		8	1		
	7	5		8			1	
1		6				3		7
		9	1			8	6	4

★☆☆☆☆

	3				9		6	
	7	1						9
			8	2		5	1	
	1					8		
8	9	2		7		1	3	5
		4					7	
	2	6		5	4			
9						4	5	
	5		9				2	

★★☆☆☆

	4			9		8		
			3	2		1		
		7						6
4	3				5			1
			8		4			
8			1				3	5
5						7		
		3		4	9			
		1		5			9	

★★★☆☆

3					7		6	
7	5			4				
	4					3		
		5		2	8		7	
		9				5		
	3		7	9		1		
		1					9	
				1			2	5
	9		6					1

★★★★☆

9		6						
5			3				1	
	3		5		6			
8					2	4	5	
1	7						6	2
	5	9	4					8
			7		5		4	
	2				4			5
						6		9

★★★★★

Supper Sudoku. Complete the grid so every row, column and 4 x 4 box contains every digit from 0 to 9 and letters from A to F inclusively. Good luck!

D	1	F	A				C	4	7	9	6	E			B
	8	6								C	B		F	7	
				E	9	5							D	A	
		7	9	B	6		1	E						C	2
	2	4	D	F			9	B				0		3	
	3	B	5	A	4		D	9							
F	C				3			1	4	D				B	A
			6			7	0	F	2	5			C	1	
						4	F	D	6		C		7	E	8
C					1			0			5		2	6	9
6	E	8						A	F	2	7				0
4	0	5	7	2			8		1						D
		3	1	9		A	E								6
5		C	B	1	8		4					F	3		7
9				5	C							1	0		
			0	D				5	9	F		B		4	

Solutions:

8	1	3	7	2	9	5	4	6
7	5	4	8	6	1	9	2	3
6	9	2	4	3	5	7	8	1
9	4	1	5	7	2	6	3	8
5	6	8	9	1	3	4	7	2
3	2	7	6	4	8	1	9	5
4	7	5	3	8	6	2	1	9
1	8	6	2	9	4	3	5	7
2	3	9	1	5	7	8	6	4

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2	3	8	5	1	9	7	6	4
5	7	1	6	4	3	2	8	9
6	4	9	8	2	7	5	1	3
7	1	5	3	9	3	8	4	6
8	9	2	4	7	6	1	3	5
3	6	4	1	8	5	9	7	2
1	2	6	7	5	4	3	9	8
9	8	3	2	6	1	4	5	7
4	5	7	9	3	8	6	2	1

★★☆☆☆

1	4	6	5	9	7	8	2	3
9	5	8	3	2	6	1	4	7
3	2	7	4	8	1	9	5	6
4	3	2	9	7	5	6	8	1
6	1	5	3	8	4	2	7	9
8	7	9	1	6	2	4	3	5
5	9	4	2	1	3	7	6	8
7	8	3	6	4	9	5	1	2
2	6	1	7	5	8	3	9	4

★★★☆☆

3	1	2	5	8	7	4	6	9
7	5	6	3	4	9	2	1	8
9	4	8	2	6	1	3	5	7
1	6	5	4	2	8	9	7	3
8	7	9	1	3	6	5	4	2
2	3	4	7	9	5	1	8	6
5	2	1	8	7	3	6	9	4
6	8	3	9	1	4	7	2	5
4	9	7	6	5	2	8	3	1

9	1	6	2	8	7	5	3	4
5	8	7	3	4	9	2	1	6
3	4	2	5	1	6	8	9	7
8	6	3	9	7	2	4	5	1
1	7	4	8	5	3	9	6	2
2	5	9	4	6	1	3	7	8
6	9	8	7	2	5	1	4	3
3	2	1	6	9	4	7	8	5
7	4	5	1	3	8	6	2	9

★★★★★

D	1	5	A	3	2	8	C	4	7	9	6	E	5	0	B
3	8	6	E	4	0	D	A	2	5	C	B	9	F	7	1
B	4	2	C	E	9	5	7	8	0	1	F	6	D	A	3
0	5	7	9	B	6	F	1	E	D	3	A	8	4	C	2
1	2	4	D	F	E	C	9	B	A	7	8	0	6	3	5
7	3	B	5	A	4	1	D	9	C	6	0	2	E	8	F
F	C	0	8	6	3	2	5	1	4	D	E	7	9	B	A
E	A	9	6	8	B	7	0	F	2	5	3	D	C	1	4
A	9	1	2	0	5	4	F	D	6	B	C	3	7	E	8
C	B	D	F	7	1	E	3	0	8	4	5	A	2	6	9
6	E	8	3	C	D	9	B	A	F	2	7	4	1	5	0
4	0	5	7	2	A	6	8	3	1	E	9	C	B	F	D
2	7	3	1	9	F	A	E	C	B	0	4	5	8	D	6
5	D	C	B	1	8	0	4	6	E	A	2	F	3	9	7
9	F	A	4	5	C	B	6	7	3	8	D	1	0	2	E
8	6	E	0	D	7	3	2	5	9	F	1	B	A	4	C

Meetings of the CFAS are held on the first Sunday of The month (if holiday weekend or special event, second Sunday) at

7:00pm – Bryan Auditorium, Morton Hall, UNCW

Group Viewing Sessions 5194

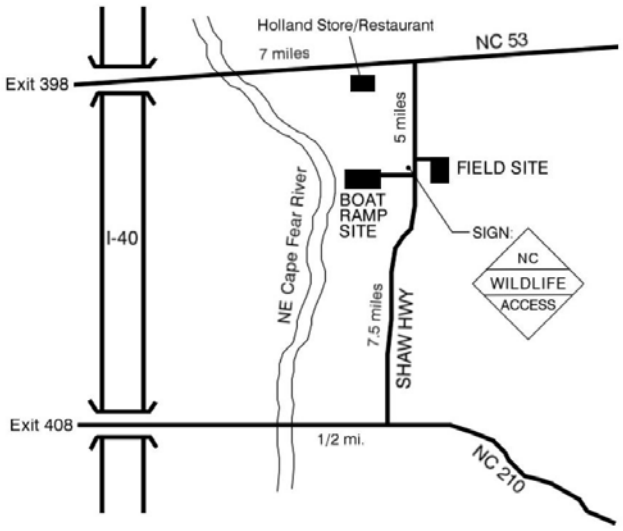
Call Ron Hawes at 762-1033 or check our email list to confirm a formal viewing session. Listed below are moonless nights so you can schedule a good viewing. All group viewing sessions will be at the Holly Shelter boat ramp site, unless otherwise specified. Time: Dusk until ?

Friday, May 11 Saturday, May 12

Friday, May 18 Saturday, May 19

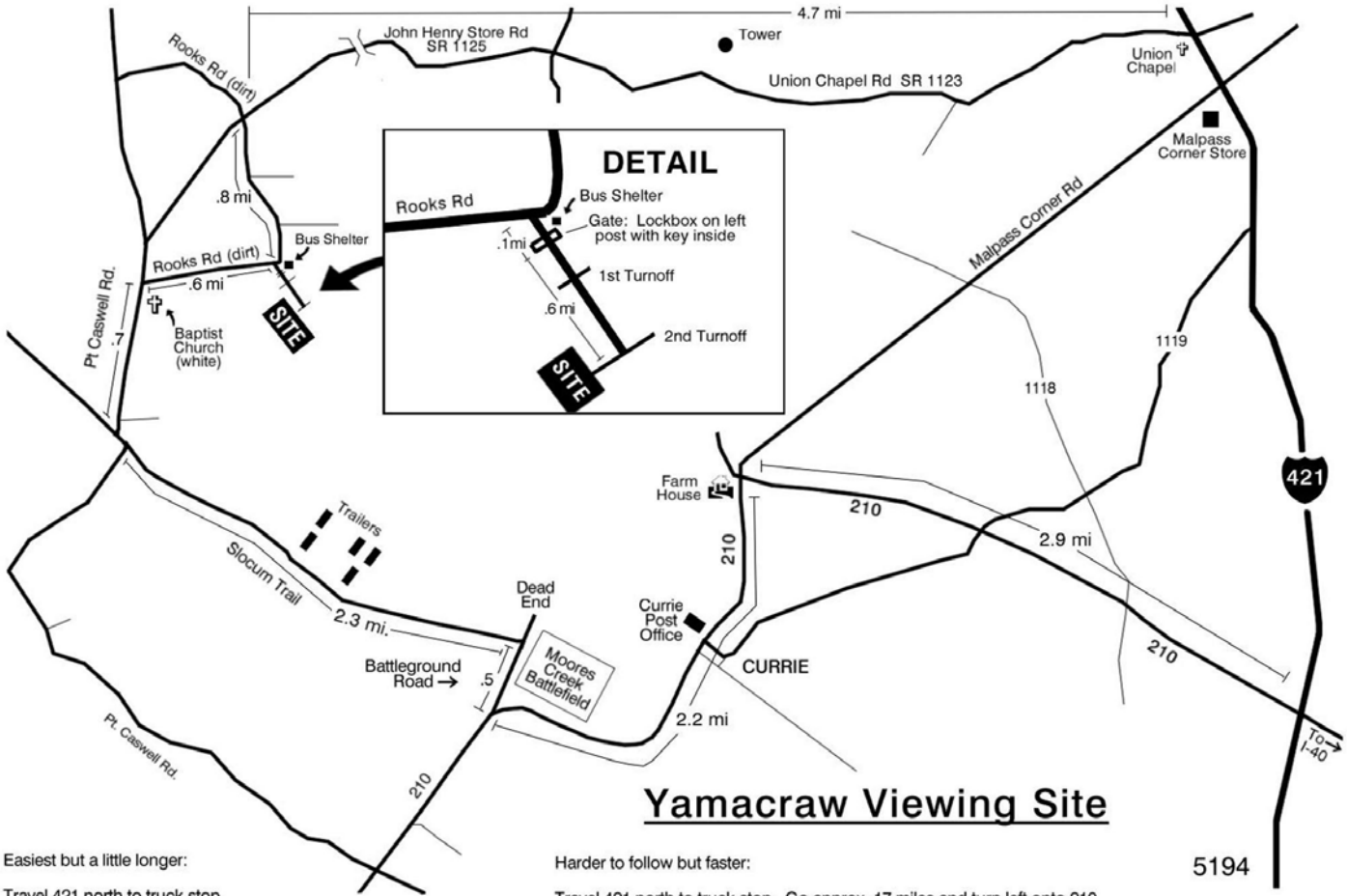
Please be cautious of unusual wildlife behavior while observing. A golf club or stick could be useful to keep nearby.

Holly Shelter Viewing Sites



Field Site Gate Open:
September 1 - February 29 and April 7 - May 14.

Please have your Holly Shelter Permit with you at the site.



Yamacraw Viewing Site

Easiest but a little longer:

Travel 421 north to truck stop.
Go approx. 20.5 miles and turn left onto Union Chapel Road.
Follow for 4.7 miles (becomes John Henry Store Road) and take left onto Rooks Road (dirt).
Follow Rooks Road .8 miles around curve, pass bus shelter and take left onto our site's road.
Travel .1 mile, unlock/relock gate, travel .6 miles, take 2nd right.

Harder to follow but faster:

5194

Travel 421 north to truck stop. Go approx. 17 miles and turn left onto 210.
Follow 210 for 2.9 miles to intersection (stop sign and big white farm house), turn left onto 210 W.
Follow 210 W past Currie Post Office and Battlefield, turn right onto Battleground Rd.
Follow Battleground Rd .5 miles, take sharp left onto Slocum Rd, follow for 2.3 miles.
Take a right onto Pt. Caswell Rd, follow .7 miles past Church, take right onto Rooks Road (dirt).
Follow Rooks Rd .6 miles, turn right onto our site's road. (If you see the bus shelter, you've gone too far.)
Travel .1 miles, unlock/relock gate, travel .6 miles, take the 2nd road on the right to our site.