



CAPE FEAR Skies



The
Monthly
Newsletter of the
Cape Fear Astronomy Club

Volume 3 No. 9

Wilmington, NC

September 1988

September Meeting Announcement

Sunday
September 11, 1988
7:00 PM
Bryan Auditorium
Morton Hall
UNC-W Campus

The next meeting of the Cape Fear Astronomy Club will be held on Sunday September 11, 1988 in the Bryan Auditorium of Morton Hall on the UNC-W Campus. Please note that this is the second Sunday in September to avoid the Labor day holiday weekend. The Business meeting will begin at 7:00 PM EDT.

The general meeting will begin at 8:00 PM. The program for this month's general meeting will be the film "The Blues for a Red Planet". This film is from Carl Sagan's Cosmos series.

Meeting Minutes from August

The August meeting of the Cape Fear Astronomy Club was held on Sunday August 7, 1988 in Bryan Auditorium of Morton Hall. Alan Hilburn called the meeting of the Cape Fear Astronomy Club to order at 7:05PM.

Paul Petty called the roll there were 17 members present.

Ronnie Hawes gave the treasures report. We currently have \$87.13 in the club's general fund and

\$394.76 in the observatory fund.

David Maness ask for all members with either unsold candy or money to turn it in as soon as possible.

Sam Bissette ask the club to consider finding a semi-permanent site to use for observing. A location within 25 miles of Wilmington; having nice dark skies and about 1 acre of land the the club can purchase or lease. The club would then build a roof-less shelter (high-fence) to protect the members and telescopes from the wind. Later on if the site is acceptable the club could build a more permanent structure on this site.

Jane Fountain gave an explanation of the preparations being made for the club's public viewing sessions for this years Mars Opposition. Jane had on display a set of informative posters that she has made for this upcoming public viewing session. Jane hopes that all of the members of the Cape Fear Astronomy club will be able to help at this public viewing session.

Alan gave a short talk on how to observe the Perseids Meteor Shower coming later this month.

The general program began at 8:00PM. Alan and Ronnie presented a slide show of Mars taken by the Viking landers.

It was agreed that the September meeting should be on the Second Sunday to avoid the Labor Day holiday.

Inside This Issue

• Abrams Sky Calendar.....	4
• Abrams Evening Sky.....	3
• August Meeting Minutes.....	1
• Candy Money Must Be Returned.....	2
• New Comet Discovered.....	2
• Sky Calendar for September.....	5
• September Meeting Announcement.....	1
• Upcoming Events for September.....	6

Candy Money Must be Returned.

David Maness tells your editor that there is still a lot of candy for which an accounting has not yet been made. If you have any unsold candy or have money that you have not yet turned in please turn it in by the September Meeting.

The club is planning to have a booth at the New Hanover county fair this October. This will be our best chance to sell the last of this candy. (We will also have T-shirts and bumper stickers for sell.)

If you are one of the people who still has candy or money *please do not forget* to return it by the September meeting.

- Tom Jacobs

Abrams Copyright Notice.

The Abrams Evening Skies on page 3 of this newsletter and the Sky Calendar on page 4 are copyrighted by the Abrams Planetarium. They are reprinted in the *CAPE FEAR SKIES* by permission of the Abrams Planetarium. Individual subscriptions are \$6.00 per year and are available by writing to:

Sky Calendar
Abrams Planetarium
Michigan State University
East Lansing, MI 48824

Individuals wishing personal copies must subscribe directly from the Abrams Planetarium at the above address.

* * * CRAS NOTICE * * *

COMET Machholz (1988j) *PRELIMINARY EPHEMERIS*

1988	UT	Moon	RA 1950	Dec	RA 2000	Dec	Delta	r	Elong	Mv	Dist	Min/Rev	Op Lat
Sep 1	0h		8 22.8	-1 30	8 25.3	-1 40	0.868	0.588	36mo	+5.4	2.72	1447.4	18 S
Sep 2	0h		8 33.7	-1 30	8 36.2	-1 40	0.875	0.561	34mo	+5.2	2.72	1447.4	18 S
Sep 3	0h	3Q	8 44.5	-1 29	8 47.0	-1 40	0.883	0.533	32mo	+5.0	2.70	1447.3	18 S
Sep 4	0h		8 55.4	-1 27	8 57.9	-1 39	0.893	0.505	30mo	+4.8	2.72	1447.4	18 S
Sep 5	0h		9 6.3	-1 24	9 8.8	-1 36	0.905	0.476	28mo	+4.6	2.72	1447.4	19 S
Sep 6	0h		9 17.2	-1 19	9 19.7	-1 32	0.919	0.447	26mo	+4.3	2.73	1447.4	19 S
Sep 7	0h		9 28.0	-1 13	9 30.5	-1 26	0.934	0.417	24mo	+4.1	2.70	1447.3	19 S
Sep 8	0h		9 38.8	-1 5	9 41.3	-1 19	0.951	0.387	23mo	+3.8	2.70	1447.3	19 S
Sep 9	0h		9 49.7	-0 55	9 52.3	-1 9	0.970	0.357	21mo	+3.5	2.73	1447.4	19 S
Sep 10	0h		10 0.6	-0 43	10 3.2	-0 58	0.990	0.326	19mo	+3.1	2.73	1447.4	19 S
Sep 25	0h		13 9.7	+4 46	13 12.2	+4 30	1.144	0.344	17ev	+3.7	22.24	1449.2	--
Oct 2	0h		14 21.0	+4 26	14 23.5	+4 12	1.149	0.549	29ev	+5.7	17.77	1446.7	16 N
Oct 9	0h		15 21.2	+3 17	15 23.7	+3 6	1.210	0.734	37ev	+7.1	15.06	1445.1	15 N
Oct 16	0h		16 11.2	+1 56	16 13.7	+1 48	1.314	0.903	43ev	+8.2	12.56	1443.6	14 N
Oct 23	0h		16 52.2	+0 43	16 54.7	+0 38	1.448	1.061	47ev	+9.1	10.32	1442.4	14 N
Oct 30	0h		17 26.0	-0 18	17 28.6	-0 20	1.602	1.209	49ev	+9.8	8.51	1441.3	15 N
Nov 6	0h		17 54.3	-1 4	17 56.9	-1 4	1.767	1.350	49ev	+10.5	7.12	1440.5	16 N
Nov 13	0h		18 18.4	-1 38	18 21.0	-1 37	1.940	1.485	49ev	+11.2	6.05	1439.9	18 N
Nov 20	0h		18 39.3	-2 0	18 41.9	-1 57	2.116	1.615	47ev	+11.7	5.24	1439.5	21 N
Nov 27	0h		18 57.7	-2 12	19 0.3	-2 8	2.292	1.740	45ev	+12.2	4.60	1439.1	24 N
Dec 4	0h		19 14.3	-2 17	19 16.9	-2 12	2.466	1.861	42ev	+12.7	4.15	1438.9	27 N

Geocentric Ephemeris computed by Stephen M. Smith (CRAS) on 08-09-1988.

This comet was discovered by Donald E. Machholz on August 6.5 with 27x120 binoculars. This is his fourth comet discovery!

Parabolic Orbital Elements are from IAU Circular No. 4637 (8/9/88).

This ephemeris was calculated from the PRELIMINARY orbital determination from 5 observations, Aug. 7-9. It should be used for PLANNING purposes, only!

Perihelion: September 17.22, 1988 at 0.156 AUs.

Angular distance traveled in 61 days is over 149 degrees.

Actual brightness is subject to change WITHOUT notice!!

The COMET RAPID ANNOUNCEMENT SERVICE publishes bulletins about newly-discovered bright comets, and an ephemeris periodical. To subscribe: send legal-size SASEs to S.M. Smith/CRAS, P.O. Box 110042, Cleveland, OH 44111-9042 USA.

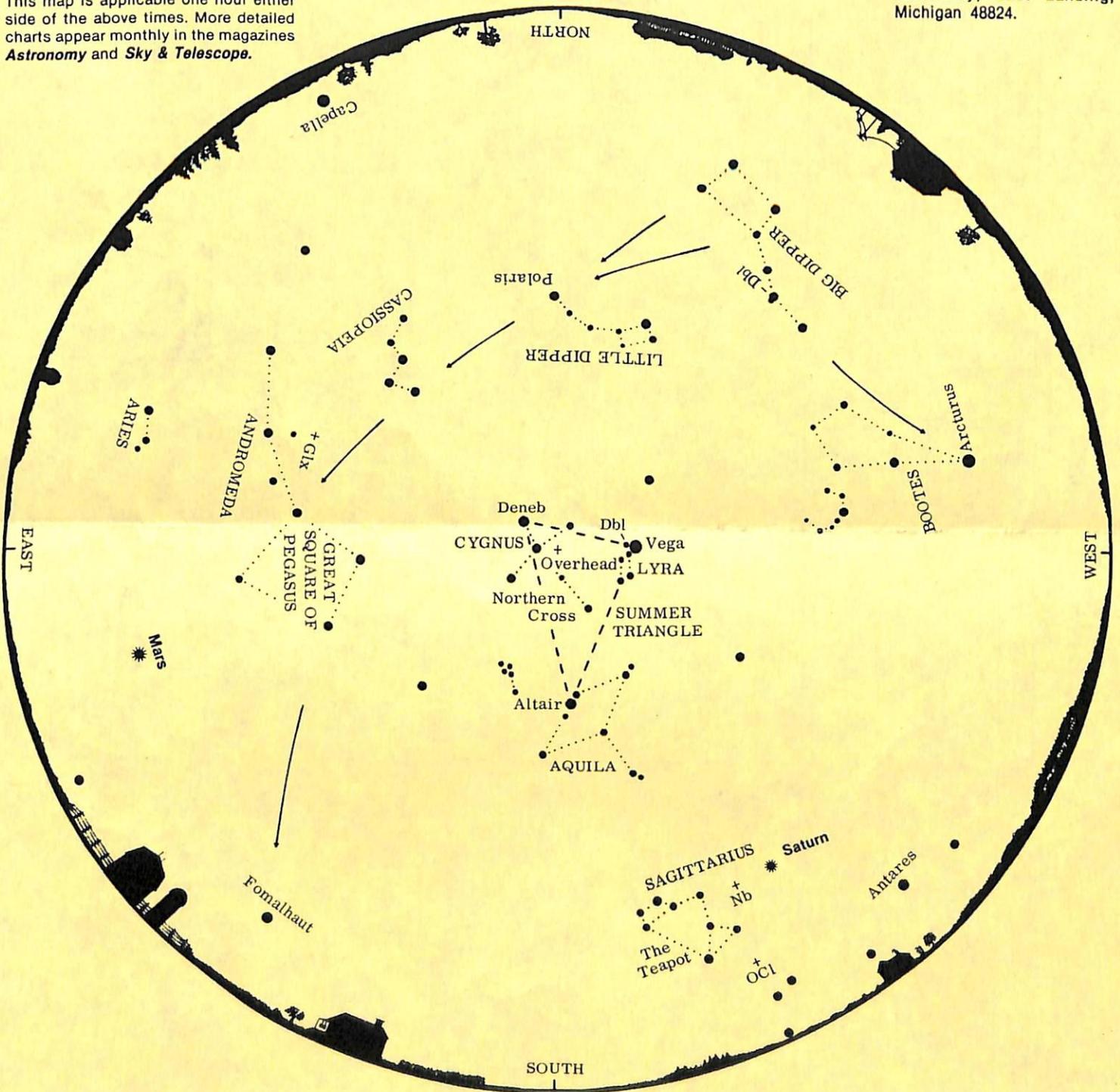
September Evening Skies

This chart is drawn for Latitude 40° north, but should be useful to stargazers throughout the continental United States. It represents the sky at the following local daylight times:

Late August 11 p.m.
 Early September 10 p.m.
 Late September 9 p.m.

This map is applicable one hour either side of the above times. More detailed charts appear monthly in the magazines *Astronomy* and *Sky & Telescope*.

© Abrams Planetarium
 Subscription: \$6.00 per year,
 from *Sky Calendar*, Abrams
 Planetarium, Michigan State
 University, East Lansing,
 Michigan 48824.



The planets Mars and Saturn are plotted for mid-September, 1988. At chart time 9 objects of first magnitude or brighter are visible. In order of brightness they are: Mars, Arcturus, Vega, Capella, Saturn, Altair, Antares, Fomalhaut, and Deneb. In addition to stars, other objects that should be visible to the unaided eye

are labeled on the map. The double star (Dbl) at the bend of the handle of the Big Dipper is easily detected. Much more difficult is the double star near Vega in Lyra. An open or galactic cluster (OC1) located below Sagittarius, low in the southwest, will challenge the unaided eye. Nearby, marked (Nb) above the "spout" of the

"Teapot," is the Lagoon Nebula, a cloud of gas and dust out of which stars are forming. The position of an external star system, called the Andromeda Galaxy after the constellation in which it appears, is also indicated (Glx). Try to observe these objects with unaided eye and binoculars.

SKY CALENDAR SEPTEMBER 1988

© ABRAMS PLANETARIUM

CURRENT SKY INFORMATION:
Call (517) 332-STAR

An aid to enjoying the changing sky

Use this scale to measure angular distances between objects on diagrams below.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p>Evening Planets: Mars is very bright orange "star" rising in E in twilight. Saturn is in S to SSW at dusk. Mercury sets 2°-16° S of W in bright twilight first 3 weeks; very difficult from N states, higher and easier from southern. Jupiter, very bright, rises in ENE within 3 hrs after sunset at month's end.</p> <p>Planets at Dawn: Venus is brilliant, well up in E (rises in ENE 3½ hrs before sunrise). Jupiter is very bright, very high SSE to SW. Mars is very bright, sinking SW to W.</p>	<p>North is up. Stars show (lx bins) to mag field 6.0. 9 Sgr. -7 Sgr & M8 (Lagoon Nebula)</p> <p>Uranus finder: Broad and narrow tracks show paths of Saturn and Uranus in Sept. Planets linger near right end of tracks first half of month, then move with increasing speed to left.</p>	<p>Moon covers part of Pleiades late Thurs evening (western U.S.) or early Fri. See box far right.</p> <p>Four hours after sunset: Moon at Last Quarter</p> <p>Pleiades</p> <p>Jupiter * ENE</p>	<p>Times of reappearance of brighter Pleiades from behind dark limb of Moon for selected cities: Thurs Sept 1: Los Angeles 11:24 and 11:36 pm PDT; Fri Sept 2: Denver 12:03, 12:31, 12:43 am MDT; Chicago 1:40, 1:47 am CDT; E. Lansing 2:43, 2:49 am EDT; Boston 2:45, 2:50 am EDT. Use telescope for best view of these occultations.</p>	<p>Today: Most distant Moon of 1988.</p> <p>New Moon tonight at 9:49 p.m. PDT (12:49 a.m. EDT on Sept. 11).</p>	<p>Friday & Saturday evenings, Sept 16 & 17: • Saturn</p> <p>Moon occults Antares</p> <p>Moon occults Tau Sco Sat 17 D 7 Sco 16</p> <p>From E Coast, star disappears in twilight & reappears after darkness falls. From Mich to Miss, star reappears in twilight. SSW</p>	<p>Mars will remain an evening "star" until July 1989, but then it will glow dimly at mag +1.8 in the western twilight, only 170 as bright as its glorious showing this month. Keep track of Mars until it disappears next July.</p>
<p>Mars, at rare brilliance, equals or slightly exceeds Jupiter next four weeks. Compare them when they're at equal altitudes, currently about 3 hours before sunrise.</p>	<p>30 minutes after sunset: Mercury and Spica in same binocular field as Moon.</p> <p>• Spica WSW</p> <p>• Mercury W</p>	<p>Rest of Sept: Saturn's rings tipped 26°-56' from edge-wise, giving as best view of their north face in Saturn's 29.5-year orbit.</p>	<p>Mars nearest Earth. Distance 36.5 million miles. At its closest since 1971, Mars won't be this close again until 2003.</p> <p>Sept 28, morning: Can you guess what will happen six days from now?</p> <p>Regulus</p>	<p>Autumnal equinox 3:20 p.m. EDT.</p> <p>Moon rises within ½ hour later each evening Sept 22-27 from northern U.S.</p> <p>Moon occults Delta Cap (Goat's Tail) tonight, except AK, HI, most of FL.</p> <p>3½ hours after sunset: Pleiades</p> <p>Moon</p> <p>Jupiter *</p> <p>Aldebaran</p> <p>Beta Tauri</p>	<p>Sept 23, morning: Venus</p> <p>Sept 30, 3½ hours after sunset: Pleiades</p> <p>Jupiter *</p> <p>Aldebaran</p> <p>• Moon</p> <p>• Tau</p>	<p>Sept 23, morning: Venus</p> <p>• Regulus</p>
<p>Annular (ring) solar eclipse in Indian Ocean.</p> <p>Summer solstice in S hemisphere of Mars; S pole tipped 25.4° toward Sun.</p> <p>Saturn at aphelion, 10.04 a.u. from Sun.</p>	<p>15 minutes after sunset: Use binoculars as sky darkens to see Mercury and Spica.</p> <p>• Spica WSW</p> <p>• Mercury W</p> <p>• Young Moon</p>	<p>As Earth overtakes it tonight, Mars stands at opposition and reaches greatest brilliance, mag -2.8. Mars rises shortly after sunset and is above horizon rest of night. Mars won't be this bright again until August 2003.</p>	<p>Sept 28, morning: Can you guess what will happen six days from now?</p> <p>Regulus</p>	<p>Sept 23, morning: Venus</p> <p>• Regulus</p>	<p>Sept 23, morning: Venus</p> <p>• Regulus</p>	<p>Sept 23, morning: Venus</p> <p>• Regulus</p>
<p>Northernmost Moon passes directly overhead in central Florida (Orlando) and S Texas within 1½ hours after sunrise. From northern U.S., Moon is very high in south about 1½ hours after sunrise.</p>	<p>11 minutes after sunset: Use binoculars as sky darkens to see Mercury and Spica.</p> <p>• Spica WSW</p> <p>• Mercury W</p> <p>• Young Moon</p>	<p>As Earth overtakes it tonight, Mars stands at opposition and reaches greatest brilliance, mag -2.8. Mars rises shortly after sunset and is above horizon rest of night. Mars won't be this bright again until August 2003.</p>	<p>Sept 28, morning: Can you guess what will happen six days from now?</p> <p>Regulus</p>	<p>Sept 23, morning: Venus</p> <p>• Regulus</p>	<p>Sept 23, morning: Venus</p> <p>• Regulus</p>	<p>Sept 23, morning: Venus</p> <p>• Regulus</p>

Magnitudes: Venus - 4.3 to - 4.1; Mars - 2.3 to - 2.8; Jupiter - 2.4 to - 2.6; Mercury (Sept 1-21) 0.0 to +0.3; Saturn +0.4 to +0.5; Uranus 5.6 to 5.7; Neptune 8. **Telescope:** Venus shrinks from 21" to 17" across, while lighted fraction increases from 55% to 68%. Mars grows to nearly 24" across. The S pole is tipped 20°-22° toward Earth and 25° toward Sun; see Sept 5, 11, 21, 27. The S polar cap is shrinking rapidly. Dark Syrtis Major is near center of Mars' disk Sept 25 at 11 p.m. EDT (8 p.m. PDT), and 0.6 hour later each night. At midmonth, Jupiter is 43" across, and Saturn's ring system, tilted nearly 27°, extends 38". Moon's Sun goes 29° E, from Leo to Virgo Sept 18. Mercury at dusk on Sept 18. Sun and

21° W (lower right) of Spica. In this poor apparition from mid-northern latitudes, Mercury gets barely 1° up in mid-twilight from lat 40° N, about ¾ hour after sunset; see Sept 14, 15, 19. Thereafter Mercury fades and drops even lower. Venus goes 33° E, from Gemini through Cancer into Leo; watch Venus approach Regulus until Oct 4. Mars retrogrades (goes W) 7°, from Cetus into Pisces, and will align with E side of Great Square of Pegasus in early Oct. Jupiter creeps only 0.9° E Sept 1-24, then begins retrograde; see Sept 24. Saturn and Uranus end retrograde Aug 30 and Sept 5, respectively. By end of Sept Saturn goes 0.8° E, and Uranus 0.3° E. See Sept 18-20, and Uranus finder on calendar.

Robert C. Victor, Jenny L. Pon, Robert D. Miller
ISSN 0733-8314

Subscription: \$6 per year, starting anytime, from Sky Calendar, Abrams Planetarium, Michigan State University, East Lansing, Michigan 48824

Sky Calendar for September 1988

(All times are Given in UT to convert to EDT subtract 4 hours.)

1st	-----	Pioneer 11 becomes the first space probe to Saturn on this date in 1979.	18th		
			17h		Neptune is stationary in right ascension resumes forward (eastward) motion.
2ed			19th		
8h		Venus passes 9° south of Pollux.	3:18		Moon at first quarter.
20h		Jupiter passes 6° south of the Moon.	3h		Saturn passes 6° north of the Moon.
3rd			5h		Uranus passes 6° north of the Moon.
3:50		Moon at last quarter.	22h		Neptune passes 6° north of the Moon.
5th			20th		
10h		Uranus is stationary in right ascension resumes forward (eastward) motion.	16h		Pallas stationary in right ascension.
6th			21st		
23h		Venus passes 6° south of the Moon.	4h		Mercury passes 1.3° south of Spica. They will be 26° East of the Sun (Evening Sky). Magnitudes will be .3 and 1.
-----		Lyncids Meteor: Radiant is located at right ascension 6:40; declination +58°; ZHR = 1 or 2.	-----		Kappa Aquarids Meteors: Radiant is located at right ascension 22:25; declination -5°; Slow speed.
7th			-----		Piscids Meteors: Radiant is located at right ascension 0:24; declination 0°; ZHR = 5.
5h		Mercury at aphelion distance is .47 a.u. from the Sun.	22ed		
-----		Epsilon Perseids Meteor: Radiant is located at right Ascension 4:08; declination +37°; ZHR < 10.	3h		Mars at it closest approach to the Earth. The distance will be .39 a.u. from Earth to Mars.
9th			19:29		Equinox. Fall begins in the northern hemisphere.
13h		Regulus passes 1.0° south of the Moon.	23rd		
-----		Piscids Meteors: radiant is located at right ascension 0:36; declination +7°; ZHR = 10.	-----		Alpha Aurigids Meteors: Radiant is located at right ascension 4:56; declination +42°
10th			24th		
15h		Moon at apogee distance is 63.7 Earth-radii.	13h		Moon at ascending node.
20h		Moon at descending node.	16h		Jupiter is stationary in right ascension begins retrograde (westward) motion.
11th			25th		
4:49		New Moon. Lunation number 813	4h		Moon at perigee distance from Earth is 56.1 Earth-radii.
5h		Winter solstice on Mars.	19:07		Full Moon.
-----		Saturn at aphelion distance is 10.0 a.u. from the Sun.	26th		
-----		The International Comet Explorer ICE-1, becomes the first space probe to reach a comet on this date in 1985.	4h		Mars passes 7° south of the Moon.
13th			27th		
16h		Mercury passes 0.6° north of the Moon.	12h		Mercury at it's greatest southern latitude - 7°.
15th			28th		
22h		Mercury at it's greatest eastern elongation of 27°.	4h		Mars at opposition. Magnitude near -2.8
16th			21h		Mercury is stationary in right ascension begins retrograde (westward) motion.
9h		The Sun enters the constellation of Virgo.	30th		
18h		Comet Tempel 2 at perihelion.	5h		Jupiter passes 6° south of the Moon.
17th			14h		Venus at ascending node.
4h		Ceres at opposition.			
21h		Antares passes 0.7° north of the Moon.			

Upcoming Events for September

Club Viewing Session
September 10, 1988; Dusk until "?" - Pender County Site

Monthly Meeting of the Cape Fear Astronomy Club
September 11, 1988; 7:00 PM - Bryan Auditorium; Morton Hall; UNC-W

Public Viewing Session - Mars Opposition
September 17, 1988; Dusk until "?" - Trask Junior High School

Public Viewing Session - Mars Opposition
September 24, 1988; Dusk until "?" - Laney High School

Tom Jacobs - Editor
c/o Cape Fear Skies
110 Linville Dr.
Castle Hayne, NC 28429



Alan Hilburn
120 Coventry Rd.
Wilmington, N.C. 28405