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Astronomical League

Lunar Club Certificate - The List.

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The List

The 100 features to be observed for the Lunar Club are listed below. At the top of each section is a space to list the instruments used in the program. After that are five columns: CHK, Object, Feature, Date and Time. The "CHK" column should be used to check off the feature as you observe it. The "Object" column lists the features in Naked Eye, Binocular, and Telescopic order, and tells you what you are observing and when the best time is to observe it. The "Feature" column lists the 100 features to be observed. Finally, the "Date" and "Time" columns allow you to log when you observed the objects. In the last section, we have listed the 10 optional activities, and broken them down as to naked eye, binocular, and telescopic. Also on page 4, we have included four illustrations to help with observing four of the

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naked eye features.

We certainly hope that you find the Lunar Club useful in helping you become more familiar with earth's nearest neighbor. If after completing this program you would like to do more work in this area, you may contact [The Association of Lunar and Planetary Observers](#):

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Member of Longmont
 Astronomical Society

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Until then, good luck, clear skies, and good observing.

Lunar Club Program

Naked Eye Objects

All observations done in
 2003 & all times are
 MDT.

Instruments Used _____

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Search:

OBJECT	FEATURE	DATE	TIME
<input type="checkbox"/> (Within 72 Hrs of new)	Old Moon in New Moon's Arms	<u>8/24</u>	<u>2:53A</u>
<input type="checkbox"/> (Within 72 Hrs of new)	New Moon in Old Moon's Arms	<u>9/26</u>	<u>6:49P</u>
<input type="checkbox"/> (Within 40 Hrs of new)	Crescent Moon, Waxing	<u>9/26</u>	<u>6:49P</u>
<input type="checkbox"/> (Within 48 Hrs of New)	Crescent Moon, Waning	<u>8/24</u>	<u>3:30A</u>
<input type="checkbox"/>	<u>Man in the Moon</u>	<u>8/9</u>	<u>9:15P</u>
<input type="checkbox"/>	<u>Woman in the Moon</u>	<u>8/5</u>	<u>10:54P</u>
<input type="checkbox"/>	<u>Rabbit in the Moon</u>	<u>8/11</u>	<u>9:45P</u>
<input type="checkbox"/>	<u>Cow Jumping Over the Moon</u>	<u>8/9</u>	<u>9:15P</u>
Maria			
<input type="checkbox"/>	Crisium	<u>8/5</u>	<u>10:54P</u>
<input type="checkbox"/>	Fecunditatis	<u>8/5</u>	<u>10:54P</u>
<input type="checkbox"/>	Serenitatis	<u>8/5</u>	<u>10:54P</u>
<input type="checkbox"/>	Tranquillitatis	<u>8/5</u>	<u>10:54P</u>

 Search:

-
-
-
-
-
-
-

Search

Nectaris
 Imbrium
 Frigoris
 Nubium
 Humorum
 Oceanus Procellarum

8/5/03 10:54
8/9 10:00
8/9 10:02
8/9 10:50
8/9 10:21
8/9 10:50L

Binocular Objects

Instruments Used 7x35 10x50 8 20x80

OBJECT	FEATURE	DATE	TIME
<input type="checkbox"/>	Lunar Rays	<u>8-9-03</u>	<u>12:00A</u>
<input type="checkbox"/>	Sinus Iridum	<u>8/9</u>	<u>10:10A</u>
<input type="checkbox"/>	Sinus Medii	<u>8/9</u>	<u>10:03</u>
<input type="checkbox"/>	Sinus Roris	<u>8/11/03</u>	<u>10:15</u>
<input type="checkbox"/>	Palus Somnii	<u>8/9</u>	<u>10:14</u>
<input type="checkbox"/>	Palus Epidemiarum	<u>8/9</u>	<u>10:13</u>
<input type="checkbox"/>	Mare Vaporum	<u>8/9</u>	<u>10:03</u>

Craters

<input type="checkbox"/>	~4 Days old	Langrenus 49	<u>8/31</u>	<u>7:30²P</u>
<input type="checkbox"/>		Vendelinus 60	<u>8/31</u>	<u>7:33P</u>
<input type="checkbox"/>		Petavius 59	<u>8/31</u>	<u>7:30P</u>
<input type="checkbox"/>		Cleomedes 26	<u>8/31</u>	<u>7:28P</u>
<input type="checkbox"/>		Atlas 15	<u>8/31</u>	<u>7:25</u>
<input type="checkbox"/>		Hercules 14	<u>8/31</u>	<u>7:25</u>
<input type="checkbox"/>		Endymion 7	<u>8/31</u>	<u>7:23²P</u>
<input type="checkbox"/>		Macrobius 26	<u>8/31</u>	<u>7:27P</u>
<input type="checkbox"/>	~7 Days old	Piccolomini 58, 69	<u>9/4</u>	<u>8:46P</u>
<input type="checkbox"/>		Theophilus 46, 47	<u>9/4</u>	<u>8:47</u>
<input type="checkbox"/>		Cyrillus 46	<u>9-4</u>	<u>8:47</u>
<input type="checkbox"/>		Catharina 57	<u>9-4</u>	<u>8:58</u>
<input type="checkbox"/>		Posidonius 14	<u>9-4</u>	<u>9:22P</u>
<input type="checkbox"/>	<i>early 7-6</i>	Fracastorius 58	<u>9-4</u>	<u>8:55</u>
<input type="checkbox"/>		Aristoteles 5	<u>9-4</u>	<u>9:01</u>
<input type="checkbox"/>		Eudoxus 13	<u>9/3</u>	<u>9:37P</u>
<input type="checkbox"/>		Cassini 12	<u>9/3</u>	<u>9:37P</u>
<input type="checkbox"/>		Hipparchus 44, 45	<u>9-4</u>	<u>9:22P</u>
<input type="checkbox"/>		Albategnius 44, 45	<u>9/4</u>	<u>8:54</u>
<input type="checkbox"/>		Aristillus 12	<u>9/3</u>	<u>9:37P</u>
<input type="checkbox"/>		Autolycus 12	<u>9/3</u>	<u>9:37P</u>

[]	Maurolycus	66	<u>9-4</u>	<u>8:57P</u>
[] ~10 Days old	Plato	3,4	<u>9-4</u>	<u>9:04</u>
[]	Archimedes	12,22	<u>9/3</u>	<u>9:37P</u>
[]	Ptolemaeus	44	<u>9-4</u>	<u>9:14P</u>
[]	Alphonsus	44	<u>9-4</u>	<u>9:14P</u>
[]	Arzachel	55	<u>9-4</u>	<u>9:16P</u>
[]	Walter	65	<u>9-4</u>	<u>9:18P</u>
[]	Maginus	65,73	<u>9-4</u>	<u>9:19P</u>
[]	Tycho	64	<u>8-10-03</u>	<u>10:10</u>
[]	Clavius	72,73	<u>10-6-03</u>	<u>7:00P</u>
[]	Eratosthenes	21,32	<u>9-4</u>	<u>8:41P</u>
[]	Longomontanus	64,72	<u>10-6-03</u>	<u>7:00P</u>
[]	Copernicus	31	<u>8-10-03</u>	<u>12:00A</u>
[]	Bullialdus	53	<u>10-6-03</u>	<u>6:47P</u>
[]	Aristarchus	18	<u>10/6/03</u>	<u>6:45P</u>
[]	Gassendi	52	<u>8-10-03</u>	<u>12:00A</u>
[] ~14 Days old	Kepler	30	<u>8-11-03</u>	<u>10:30P</u>
[]	Grimaldi	39	<u>8-11-03</u>	<u>10:31P</u>

Telescopic Objects

Instruments Used 8" f/8 @ 162 Power

OBJECT	FEATURE	DATE	TIME
[]	Sinus	<u>9/4</u>	<u>8:40</u>
[] 10	Aestuum 32,33	<u>9/4</u>	<u>8:04P</u>
[] 4	Lacus Mortis 14	<u>9/4</u>	<u>7:46P</u>
[] 7	Palus Putredinis 22	<u>10/6/03</u>	<u>7:04P</u>
[] 10	Promontorium Laplace 10	<u>10/6/03</u>	<u>7:04P</u>
[] 10	Promontorium Heraclides 10	<u>9/29</u>	<u>7:00P</u>
[] 2 day	Promontorium Agarum 38	<u>9/3</u>	<u>9:05P</u>
[] 7	Montes Alpes 12	<u>9/4</u>	<u>7:45P</u>
[] 7	Montes Apenninus 22	<u>9/4</u>	<u>7:45P</u>
[] 7	Mons Hadley 22	<u>9/3</u>	<u>9:09P</u>
[] 7	Mons Pico 12	<u>10/6/03</u>	<u>7:07P</u>
[] 10	Mons Pico 11	<u>9/4</u>	<u>8:07P</u>
[] 4	Rupes Altai 57	<u>9/4</u>	<u>8:37P</u>
[] 7	Rima Hyginus 33,34	<u>10-8-03</u>	<u>8:03P</u>
[] 14	Vallis Schroteri 18	<u>9/3</u>	<u>9:41</u>
[] 7	Vallis Alpes 4,12	<u>10-6-03</u>	<u>7:20P</u>
[] 10	Rupes Recta (straight wall) 54		

Craters

<input type="checkbox"/> ~4 Days old	Picard 26, 37	<u>9/29</u>	<u>7:08</u>
<input type="checkbox"/>	Furnerius 69	<u>9/29</u>	<u>7:21</u>
<input type="checkbox"/>	Petavius Wall 59	<u>9/29</u>	<u>7:12</u>
<input type="checkbox"/>	Messier/Messier A 48	<u>9/29</u>	<u>7:11</u>
<input type="checkbox"/>	Proclus 26	<u>9/29</u>	<u>7:09</u>
<input type="checkbox"/>	Fabricius 68	<u>9/29</u>	<u>7:16</u>
<input type="checkbox"/> ~7 Days old	Plinius 24	<u>9/4</u>	<u>8:02</u>
<input type="checkbox"/>	Mitchell 5	<u>9/4</u>	<u>8:15</u>
<input type="checkbox"/>	Cassini A 12	<u>9/3</u>	<u>9:00P</u>
<input type="checkbox"/>	Manilius 23, 34	<u>9/4</u>	<u>8:16</u>
<input type="checkbox"/>	Gemma Frisius 66	<u>9/4</u>	<u>8:33</u>
<input type="checkbox"/> ~10 Days old	Davy 43	<u>10-6-03</u>	<u>7:20P</u>
<input type="checkbox"/>	Pitatus 54, 64	<u>10-6-03</u>	<u>7:35P</u>
<input type="checkbox"/>	Billy 40	<u>10-8-03</u>	<u>8:15P</u>
<input type="checkbox"/>	Fra Mauro 42, 43	<u>10-6-03</u>	<u>7:25P</u>
<input type="checkbox"/>	Clavius craterlets 72, 73	<u>10-6-03</u>	<u>7:41P</u>
<input type="checkbox"/>	Hippalus 52, 53	<u>10-6-03</u>	<u>7:38P</u>
<input type="checkbox"/>	Herschel, J. 44	<u>9-4</u>	<u>9:06</u>
<input type="checkbox"/> ~14 Days old	Schickard 62	<u>10-8-03</u>	<u>8:18P</u>
<input type="checkbox"/>	Reiner Gamma 29	<u>10-8-03</u>	<u>8:07</u>

Optional Activities:

Naked Eye:

1. Estimate first quarter phase within eight hours.
2. Estimate third quarter phase within eight hours. *8/20/03 @ 6:15 A ~ 4° E of S so*
3. Estimate full moon within thirty-six hours. *8/11/03 9:45P 8/19/03 11:55P*
- ✓ 4. Plot moon's position against the stars for three consecutive days.
5. Compare the size of the full moon on the horizon with the full moon on the meridian using a dime held at arm's length.
- ✓ 6. Find the thinnest phase by which you can read newsprint. *The 9-4 moon - can see the words with difficulty - can read text*

Binocular:

1. Sketch libration - use Mare Crisium or Grimaldi for examples.

2. Sketch a lunar map - use any scale for binoculars only.

Telescopic:

I have watched the moon move over then uncover Saturn last year so I have watched the moon move over at least an hour's period.

1. Plot the moon's hourly motion against the stars for two hours or more.
2. Measure the height of a lunar mountain - need to calculate the sun's elevation at the mountain and estimate the shadow length - try Mt. Piton.

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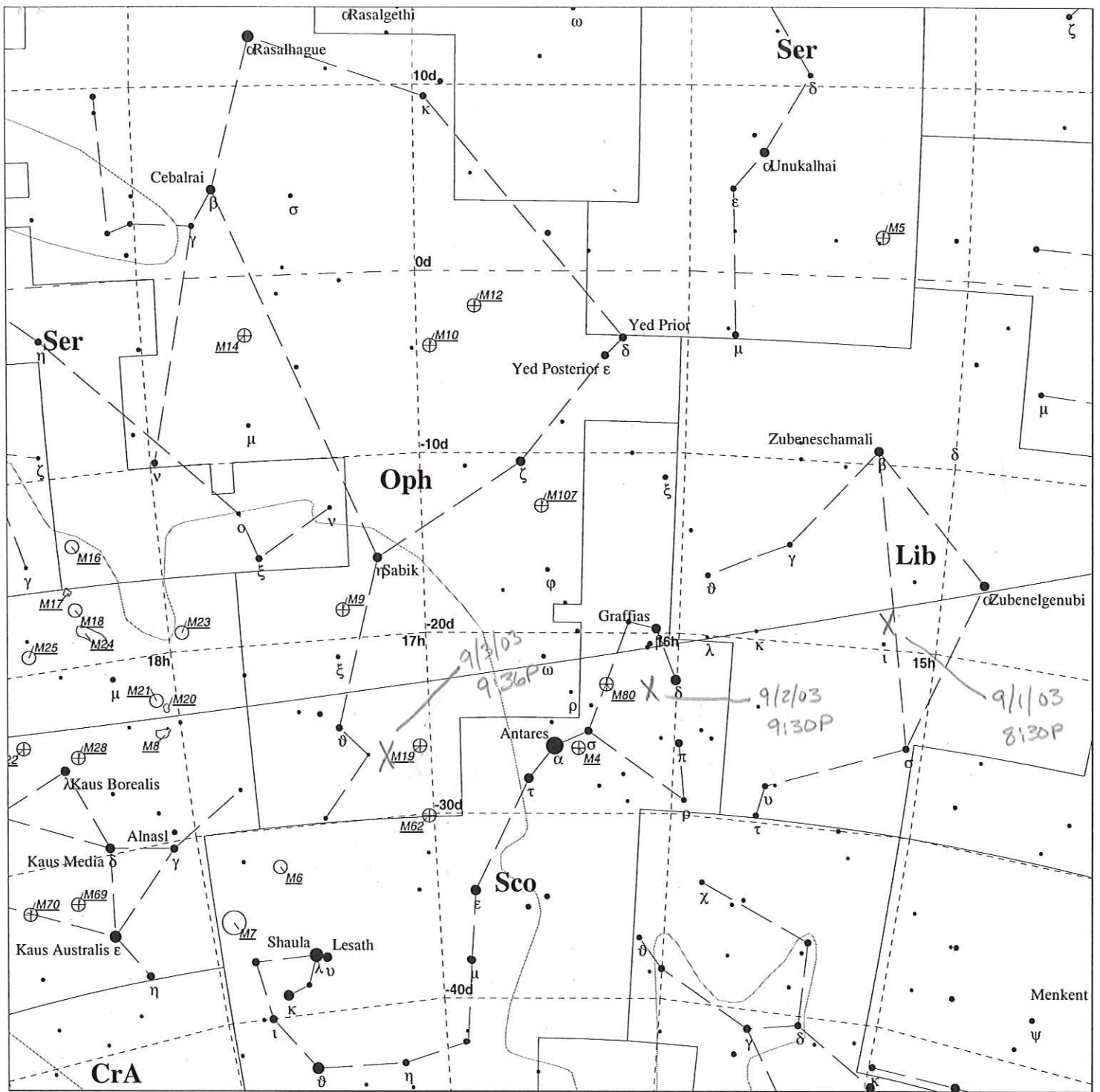
[The Man, Woman, and Rabbit in the Moon, and the Cow Jumping Over the Moon;](#)

[Lunar Club Awardees;](#)

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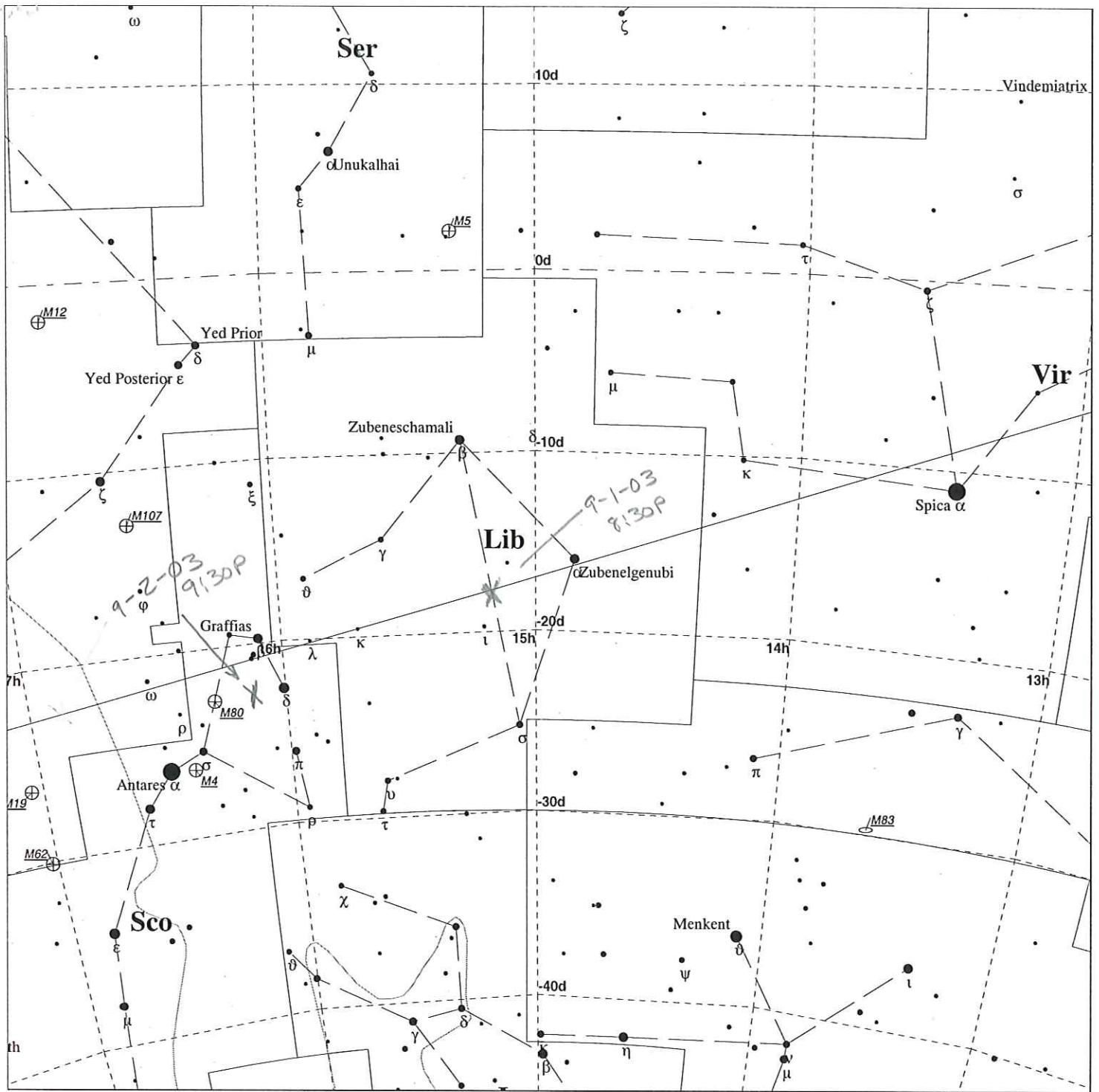
This page is maintained by David Knighton for the Astronomical League. Comments, corrections, and suggestions can be addressed to webmaster@astroleague.org. This page last updated January 4, 1997.



Deepsky 2003 RA: 16h 30m, Dec: -15d 29m, FOV: 56d, Mag: 5.5

Star Charts By Dean Williams

- | | | | |
|-------------|--------------------|-----------|------------|
| ● ≤ 0.8 | ○ Galaxy | ♿ Mercury | ♇ Pluto |
| ● 0.8 - 1.6 | ○ Open Cluster | ♀ Venus | ☉ Sun |
| ● 1.6 - 2.4 | ⊕ Globular Cluster | ♂ Mars | ☾ Moon |
| ● 2.4 - 3.1 | □ Diffuse Nebula | ♃ Jupiter | ♁ Asteroid |
| ● 3.1 - 3.9 | ◻ Planetary Nebula | ♄ Saturn | ☄ Comet |
| ● 3.9 - 4.7 | ⊙ Variable Star | ♅ Uranus | ♁ Unknown |
| ● > 4.7 | ⊙ Double Star | ♆ Neptune | |



Deepsky 2003 RA: 14h 56m, Dec: -15d 29m, FOV: 56d, Mag: 5.5

Star Charts By Dean Williams

- ≤ 0.8
- 0.8 - 1.6
- 1.6 - 2.4
- 2.4 - 3.1
- 3.1 - 3.9
- 3.9 - 4.7
- > 4.7

- Galaxy
- Open Cluster
- ⊕ Globular Cluster
- Diffuse Nebula
- Planetary Nebula
- ⊙ Variable Star
- Double Star

- ♿ Mercury
- ♀ Venus
- ♂ Mars
- ♃ Jupiter
- ♄ Saturn
- ♅ Uranus
- ♆ Neptune

- ♇ Pluto
- ☉ Sun
- ☾ Moon
- ♁ Asteroid
- ☄ Comet
- ⊙ Unknown