

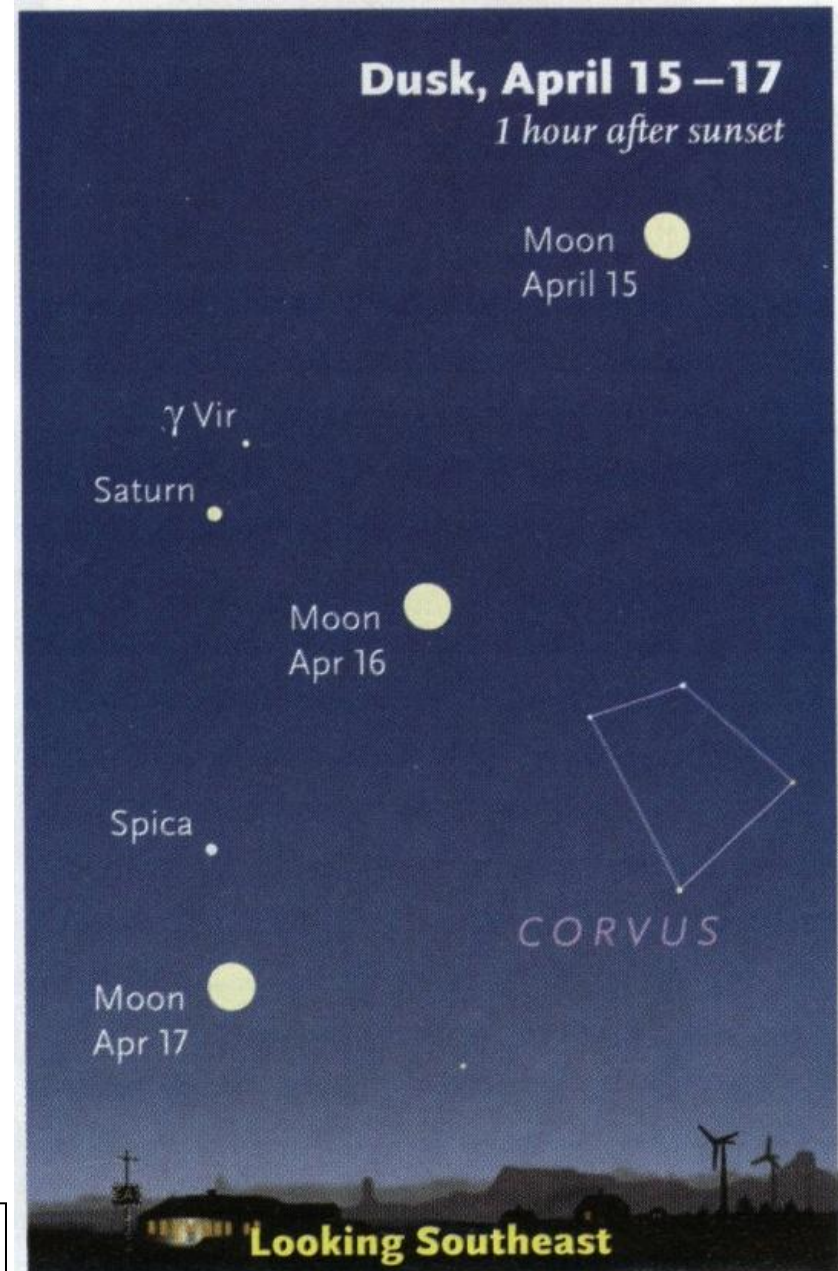
April 2011 Sky Events – the Planets

- ★ This month is dominated by **Saturn**.
- ★ Saturn reaches **opposition** (opposite the Sun in the sky), rising around sunset and setting around sunrise, and its best viewing position on **April 4th**.
- ★ This month Saturn will be its brightest and biggest through a telescope for 2011.
- ★ All the **other planets** are at or near **conjunction** this month (lost, or nearly so, in the Sun's glare).
- ★ That leaves Saturn as the lone planet in the evening sky.

April 2011 Sky Events – Moon & Saturn

- ★ Find the waxing gibbous Moon (full on April 17th) gliding through the constellation **Virgo**.
- ★ The Moon passes near both the planet **Saturn** and the bright star **Spica**.
- ★ **Saturn outshines Spica** by a only 0.5 magnitude. Can you detect the difference?

Image courtesy of Sky & Telescope



April 2011 Sky Events – the Planets

- ★ **Jupiter and Mercury** move from their evening sky appearance in March to a very low and difficult-to-view morning twilight showing in April.
- ★ **Jupiter** reaches **conjunction on the 6th**, while **Mercury** reaches **inferior conjunction on the 9th**.
- ★ **Venus** remains bright and low in the morning sky just before dawn.
- ★ **Uranus and Mars** will be challenging to find in the pre-dawn sky this month.
- ★ Faint **Neptune** may be found with a telescope in the pre-dawn sky **in the constellation Aquarius**.

Apr. 2011 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Saturn	8.6 AU_s	Virgo	19.2 but 44 with rings	0.4	Best viewed near midnight
Jupiter	5.9 AU_s	Pisces	33.3	-2.1	Difficult to see this month
Mercury	0.7 AU_s	Pisces	10.7	2.1	Difficult to see this month

Apr. 2011 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Venus	1.3 AU _s	Aquarius, Pisces & Cetus	12.4	-3.9	Brilliant “morning star” low in the E-SE
Neptune	31 AU _s	Aquarius	2.2	7.9	Find it in the pre-dawn sky
Mars	2.3 AU _s	Pisces	4.0	1.2	Difficult to see this month

Apr. 2011 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Uranus	21 AUs	Pisces	3.4	5.9	Difficult to see this month

Along with the Sun, 5 of the 7 planets (that we find “wandering” in the sky) spend some or all of their time this month in the constellation Pisces!

The Moon this month – Apr. 2011

- ☾★ New Moon – 3rd at 10:32 a.m.
- ☾★ First Quarter – 11th at 8:05 a.m.
- ☾★ Full Moon – 17th at 10:44 p.m.
- ☾★ Last Quarter – 24th at 10:47 p.m.

Unless otherwise indicated, all times are EDT

Friday evening, Apr. 1st

Astronomy Club of Asheville monthly stargaze

- ★ **Sunset:** 7:51 p.m. EDT
- ★ **Saturn** rises at sunset in the constellation Virgo, but it will not be in decent viewing position until about 9:30 p.m.; with best viewing around midnight.
- ★ **Saturn's rings** will be tilted at about an 8° angle, and easily visible.
- ★ **Saturn** will be surrounded by many of its brighter **moons** tonight.
- ★ How many can you detect with your telescope?

April 2011 Highlight: Lyrid Meteors

- ★ The annual **Lyrid meteor shower** peaks the mornings of **April 22nd and 23rd**.
- ★ The bright light of the **waning gibbous Moon** will mitigate the show this year.
- ★ **Comet 1861/G1 Thatcher** (with a period of 415 years) is the source of the meteors.
- ★ The meteors appear to radiate from the direction of the **constellation Lyra** – hence the shower's name.

April 2011 Highlight

2 Celestial Wonders in Lynx

- ★ The faint northern constellation Lynx was introduced in 1687 by Polish astronomer Johannes Hevelius to fill the gap between Ursa Major and Auriga.
- ★ Hevelius named it Lynx because, he said, only the lynx-eyed would be able to see it – a reference to the fact that his own eyesight was exceptionally keen!
- ★ Lynx contains 2 NGC objects that are attainable challenges for telescopes of 6-inch aperture or more: NGC 2683 – a galaxy and NGC 2419 – a globular star cluster.

April 2011 Highlight

Edge-on spiral galaxy NGC 2683 in Lynx

- ★ Located some 20 million LYs away, this 10.6 mag. galaxy was discovered by Wm. Herschel in 1788.
- ★ It's a Herschel 400 object.
- ★ It's dimensions are about 9' by 2'.
- ★ Small telescopes only show the galaxy core.



Coordinates:

RA 8h 53m; DEC +33° 25m

April 2011 Highlight

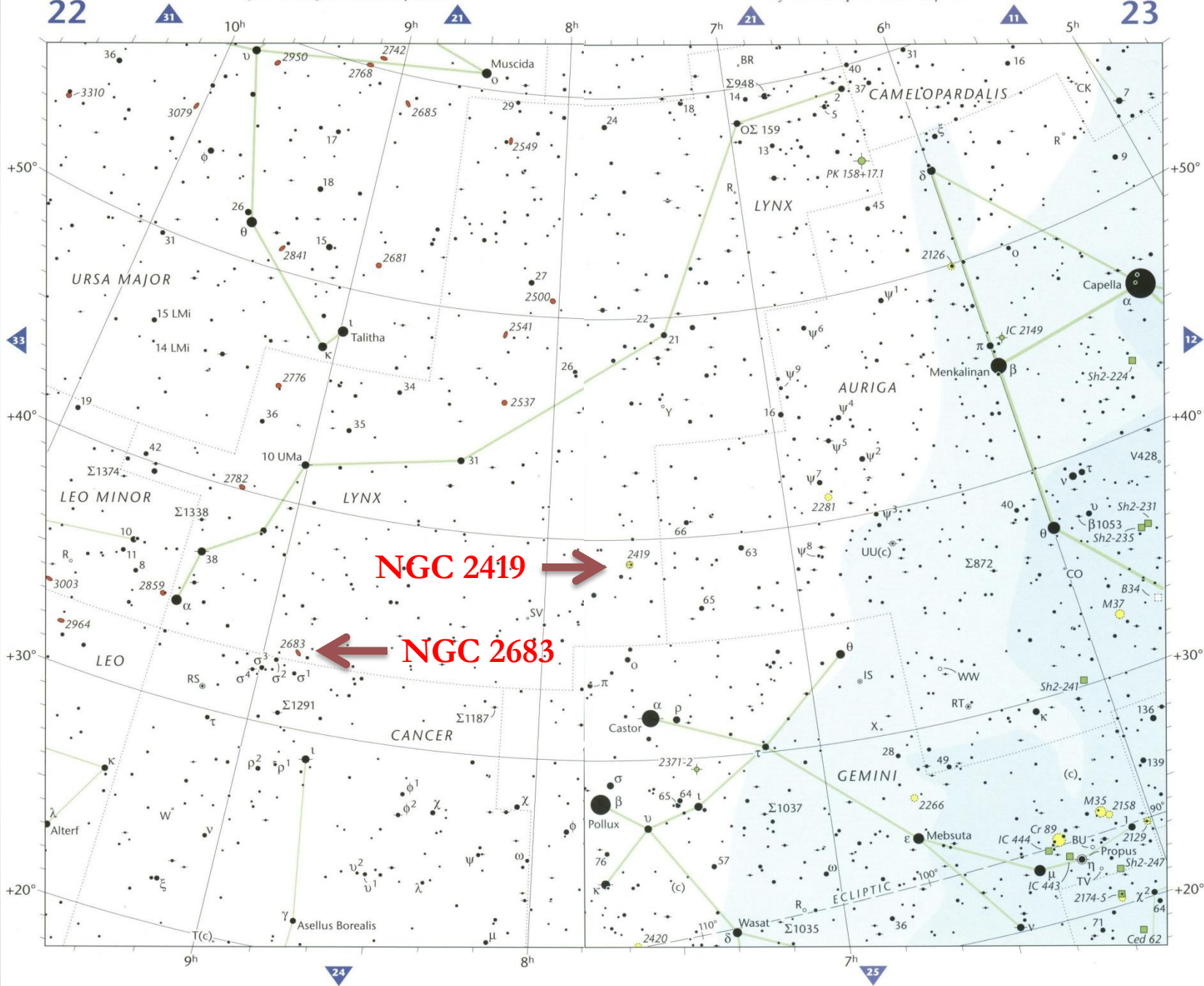
Distant globular star cluster NGC 2419 in Lynx

- ★ Located some 300 thousand LYs away, this 10.4 mag. cluster is one of the farthest of its type.
- ★ It's moniker is the "Intergalactic Wanderer".
- ★ It's Caldwell object #25.
- ★ The 2 Magellanic Cloud satellite galaxies are much closer than this cluster!
- ★ Use the 2 stars to locate it.



Coordinates:

RA 7h 38m; DEC +38° 53m



NGC 2419 →

← NGC 2683

April 2011 Highlight

2 interesting stars for small telescopes in Leo

- ★ Two of the brightest stars in the constellation **Leo** provide some celestial rewards for small telescopes.
- ★ **Regulus** (“the little king”), alpha Leonis, mag. 1.4, is the brightest star in the constellation.
- ★ Binoculars or a small telescope will show a wide companion of mag. 7.7.
- ★ **Algieba** (“the forehead”), gamma Leonis, mag. 2.3, has a true, but tight, binary companion of mag. 3.6.

April 2011 Highlight

The star Regulus in Leo

- ★ Located some 77 LYs away, Regulus and its companion seen at about 5 o'clock.
- ★ They are separated by about 3'.



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Notice the faint glow to the right of Regulus. That is “Leo I”, an 11.2 mag. dwarf spheroidal satellite galaxy to our Milky Way, located some 820,000 LYs away and difficult to see.

April 2011 Highlight

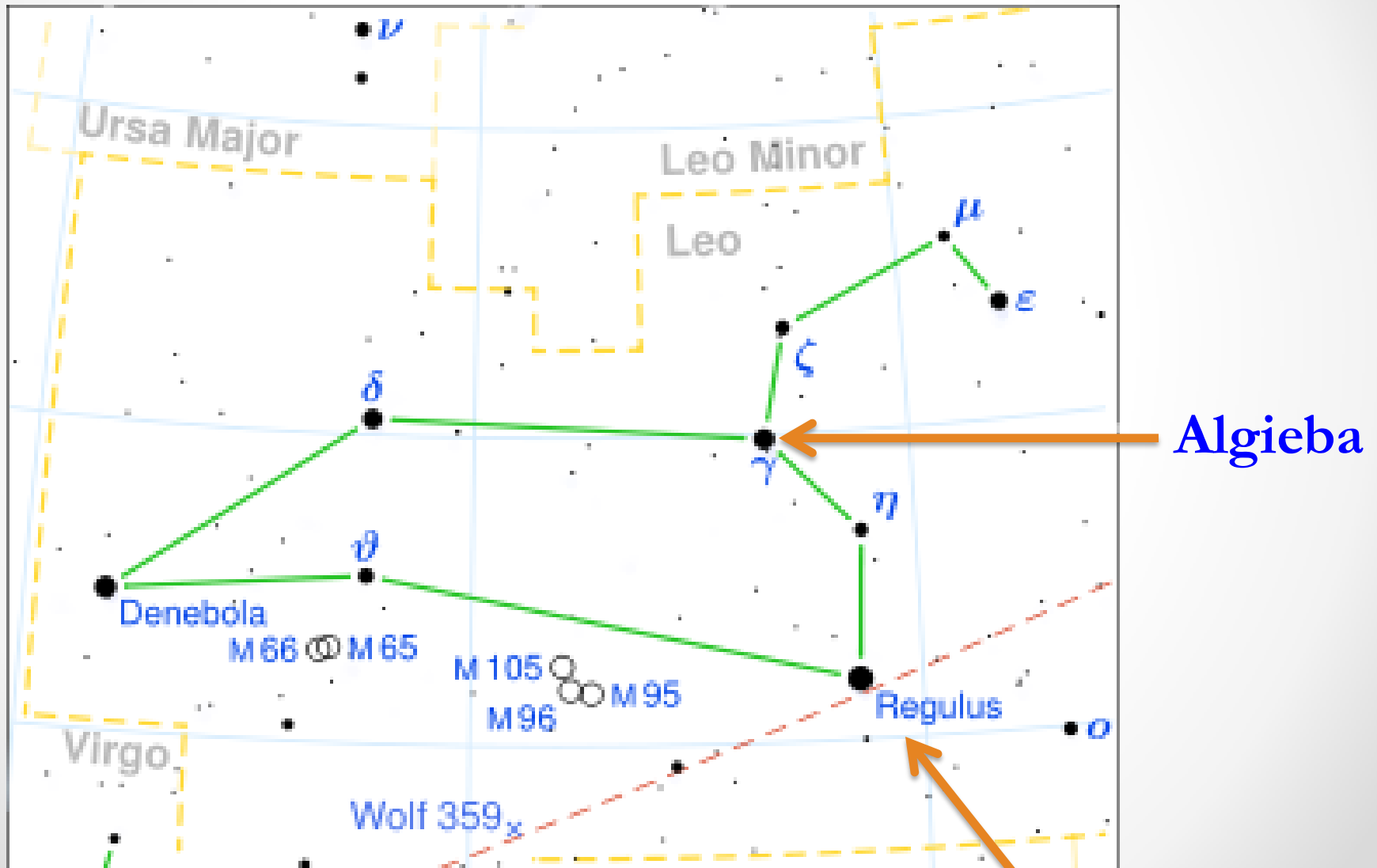
The star Algieba in Leo

- ★ Located some 126 LYs away, Algieba presents 2 golden suns.
- ★ They are separated by only 4.6"; so use high power.
- ★ They are a true binary pair orbiting each other every 619 years.



April 2011 Highlight

Regulus and Algieba in Leo



April 2011 Highlight

A most interesting star in Ursa Major

- ★ Located **only 8.3 LYs away** is the remarkable red dwarf star **Lalande 21185** – 4th closest star system to the Sun.
- ★ You will need a telescope to see this faint **red dwarf star** at mag. 7.5.
- ★ What makes it truly remarkable is the brighter **red giant star** just 47 arc minutes away – **HIP # 53726**.
- ★ **That star is 894 LYs away** and outshines our Sun by a factor of 2,300!
- ★ In a low power eyepiece both stars may be seen in the same field of view! **A red giant and red dwarf together!**
- ★ **Coordinates for Lalande 21185:** RA 11h, 03m; DEC +35°, 58m. HIP # 53726 is just 47' west.

April 2011 Highlight – Star Lalande 21185

More info on star Lalande 21185 → AKA: Hip 54035 or HD 95735 or SAO 62377

Located in Ursa Major near the Leo Minor border: RA 11h, 3m; DEC +35d, 58m

Lalande 21185 is a class **M2 red dwarf** star (about one-third the mass of our sun and about 3,000° K), 8.3 light years away at magnitude 7.5.

It is the 4th closest star system to the sun (the 6th closest star). The other closer star systems also are or contain red dwarfs: Alpha Proxima Centauri, Barnard's Star in Ophiucus, and Wolf 359 in Leo. Of these three red dwarfs, only Barnard's star is detectable in most amateur telescopes.

Lalande 21185 is one of the brightest red dwarfs in our solar neighborhood. Astronomers think that Lalande 21185 may have a binary stellar companion and/or several Jupiter size planets. It also has a large proper motion of about 5" of arc per year. Barnard's star has a larger proper motion of over 10" of arc per year.

Lalande 21185 obtains its name from Joseph-Jerome Lalande, a Frenchman and friend of Charles Messier. He was also director of the Paris Observatory in the 1700s. He cataloged close to 50,000 stars during his lifetime.

For detail location information use: Sky Atlas 2000.0, Chart 6 and Uranometria 2000, vol. 1, chart 55, left side. You will find Lalande 21185 two degrees east of NGC 3432 – an 11th mag. elongated galaxy in nearby constellation Leo Minor.

See this red dwarf and a red giant in the same 47' FOV.

Located just 47 arc minutes west of Lalande 21185 is a 6th magnitude M2 class **red-giant** star designated Hip 53726 and SAO 62345. The 2 stars fit nicely in the same low-power field-of-view (FOV).

Hip 53726 appears 4 times brighter than Lalande 21185, yet it is over 100 times farther away at 894 light years!!

Double stars Variable stars

Open clusters

Globular clusters

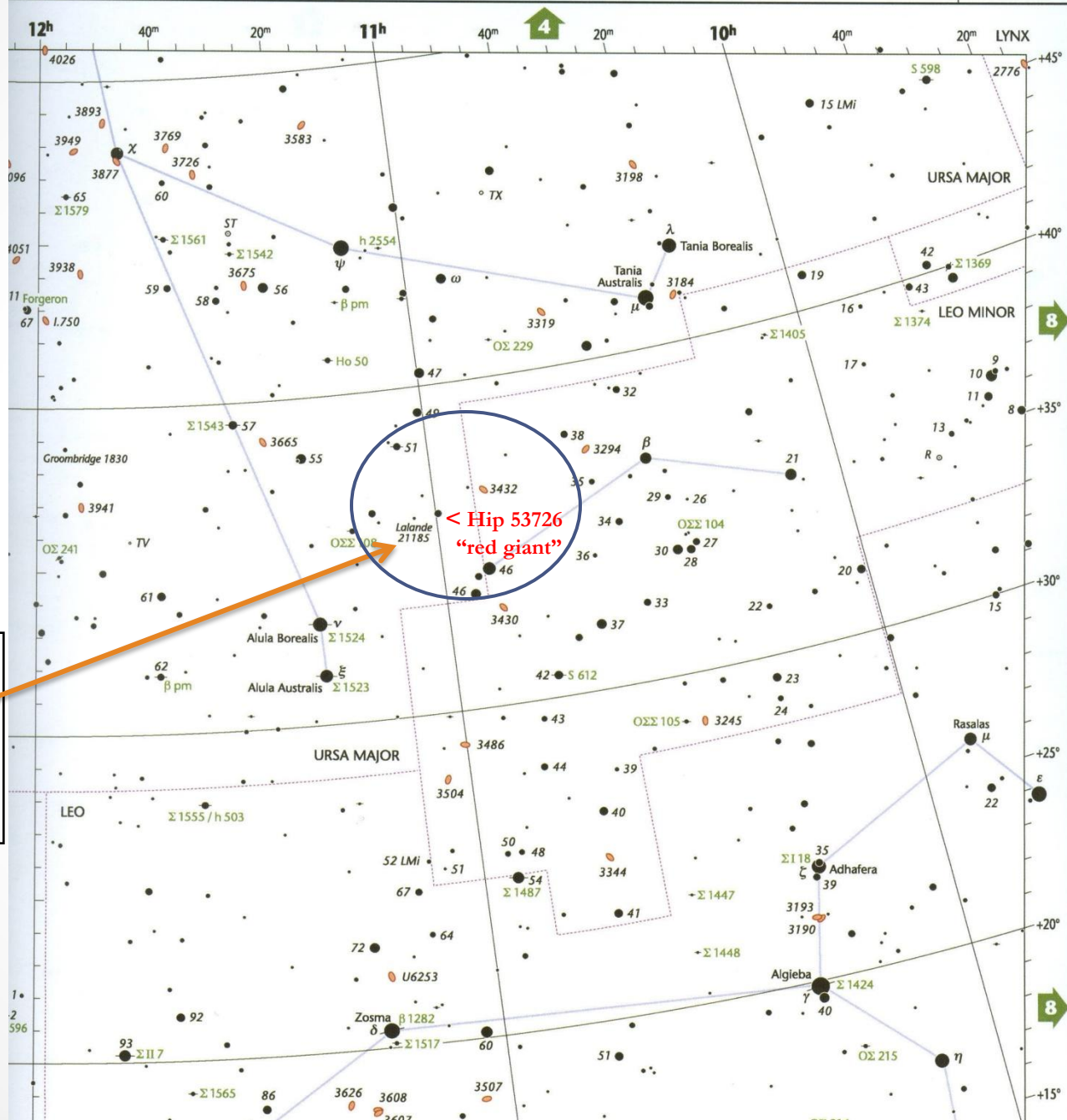
Planetary nebulae

Diffuse nebulae

Dark nebulae

Galaxies

9



Lalande 21185 - red dwarf

< Hip 53726
"red giant"

End