



ROYAL
ASTRONOMICAL
SOCIETY
OF CANADA
KW Centre

What's Up?

January 13-February 9, 2023



By: Michael Wright

What's Up – Solar System

DATE	SOLAR SYSTEM SKY EVENTS
Jan. 15	Last Quarter
Jan. 21	New Moon (lunation 1238), moon at perigee - Large Tides!
Jan. 22	Venus less than a degree from Saturn in evening sky!
Jan. 26	Jupiter 2°N from Moon at 20:00 EST
Jan. 28	First Quarter
Jan. 29	Uranus 1°S of Moon at 0:00 EST
Jan. 31	Mars 0.1°N of Moon at 0:40 EST
Feb. 05	Full Moon (smallest in 2023)
Feb. 07	Zodiacal Light visible in West after evening twilight for next two weeks!

Morning Sky

Mercury – SGR
Ceres - VIR
Pluto - SGR

Most of the Night

Mars - TAU
Uranus – ARI
Pallas - CMA

Evening Sky

Venus - CAP Neptune - AQR
Saturn - CAP Vesta – AQR
Jupiter – PSC Juno - PSC

Planet
anner

Grey = Close to Sun

What's Up – Lunar Librations



Western Libration - January 16



Eastern Libration - January 28



Southern Libration - February 5



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Nice Sight No. 1

Saturn & Venus in Telescope

Sun. Jan. 22

6:40 PM

View to W

Sunset: 5:20 PM



Ocular #2: Baader
10mm
Ocular FL: 10.0 mm
Ocular aFOV: 68.00°
Telescope #1: Bau
Lomb 114mm Newt
7.8
Magnification: 90.0
Exit pupil: 1.28 mm
FOV: 0.7556°
Lens: None
Multiplicity: N/A

th, Kitchener, 336 m FOV 1.11° 18.1 FPS 2023-01-22 18:40:23 UTC-05:00

Graphic created with Stellarium

Nice Sight No. 2

Jupiter & Moon in Binoculars

Thu. Jan. 26

8:00 PM

View to W-SW

Sunset: 5:25 PM



Graphic created with Stellarium



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Nice Sight No. 3

Uranus & Moon in Telescope

Sun. Jan. 29

12:00 AM

View to W



◀ Ocular #1: Baader
24mm
Ocular FL: 24.0 mm
Ocular aFOV: 68.00°

◀ Telescope #1: Bau
Lomb 114mm Newt
7.8
Magnification: 37.5
Exit pupil: 3.07 mm
FOV: 1.8145°

◀ Lens: None
Multiplicity: N/A

rth, Kitchener, 336 m FOV 2.67° 22.8 FPS 2023-01-29 00:00:45 UTC-05:00

Graphic created with Stellarium



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Nice Sight No. 4

Mars & Moon in Telescope

Tue. Jan. 31

12:00 AM

View to W



← Ocular #1: Baader
24mm
Ocular FL: 24.0 mm
Ocular aFOV: 68.00°

← Telescope #1: Bau
Lomb 114mm Newt
7.8
Magnification: 37.5
Exit pupil: 3.07 mm
FOV: 1.8145°

← Lens: None
Multiplicity: N/A

rth, Kitchener, 336 m FOV 2.67° 5.81 FPS 2023-01-31 00:40:23 UTC-05:00

Graphic created with Stellarium



See the light! Zodiacal, that is...

Several club members observed this challenging sight in 2021 and 2022

Best dates: February 7 to 21 2023

When moon will not interfere

-Another window opens in March during the next lunation

Best time: Astronomical dusk (~8:30 PM)

Best place: Far from city lights. The closer to Lake Huron, the better

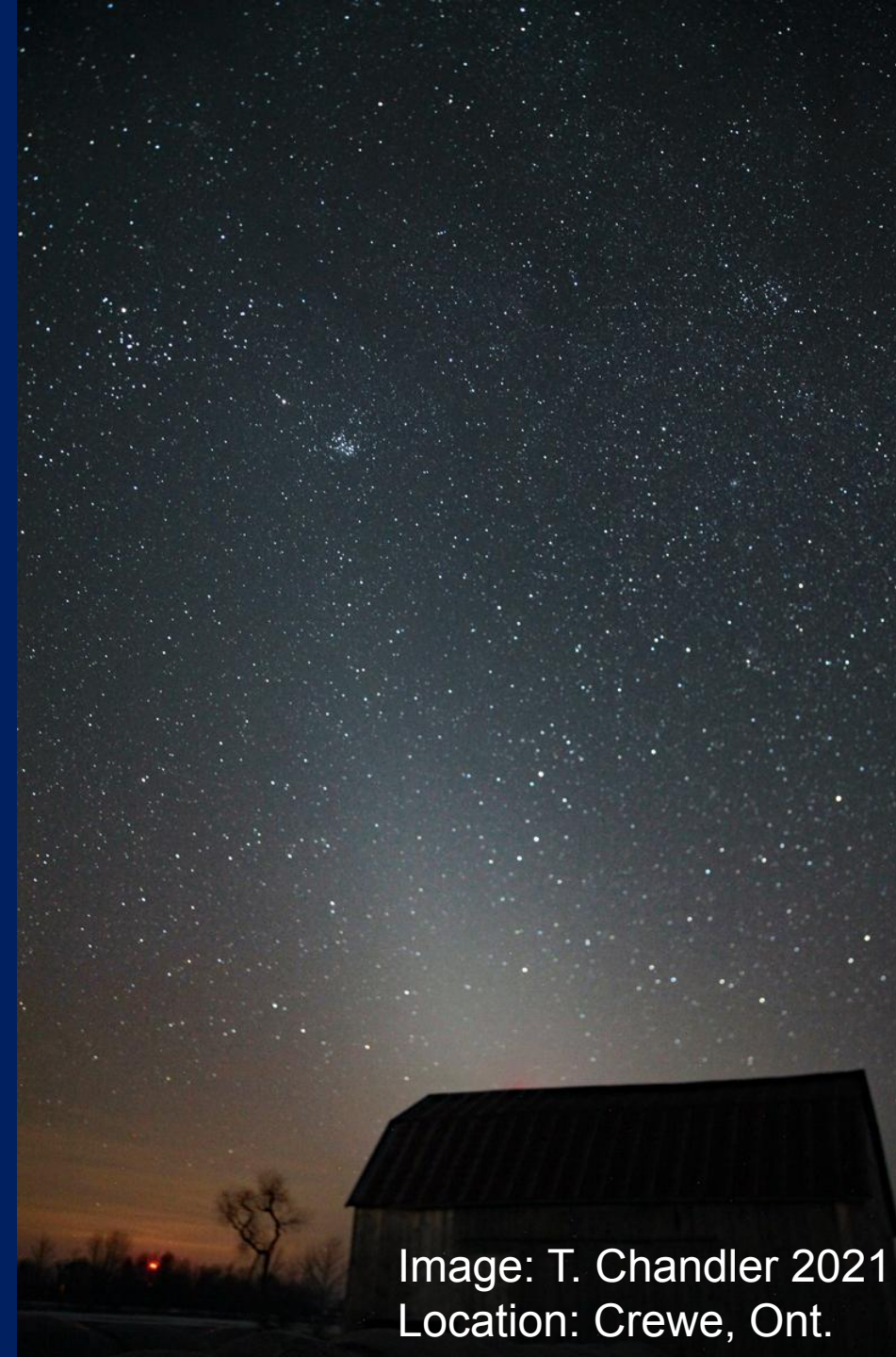


Image: T. Chandler 2021
Location: Crewe, Ont.



See the light!

Zodiacal, that is...

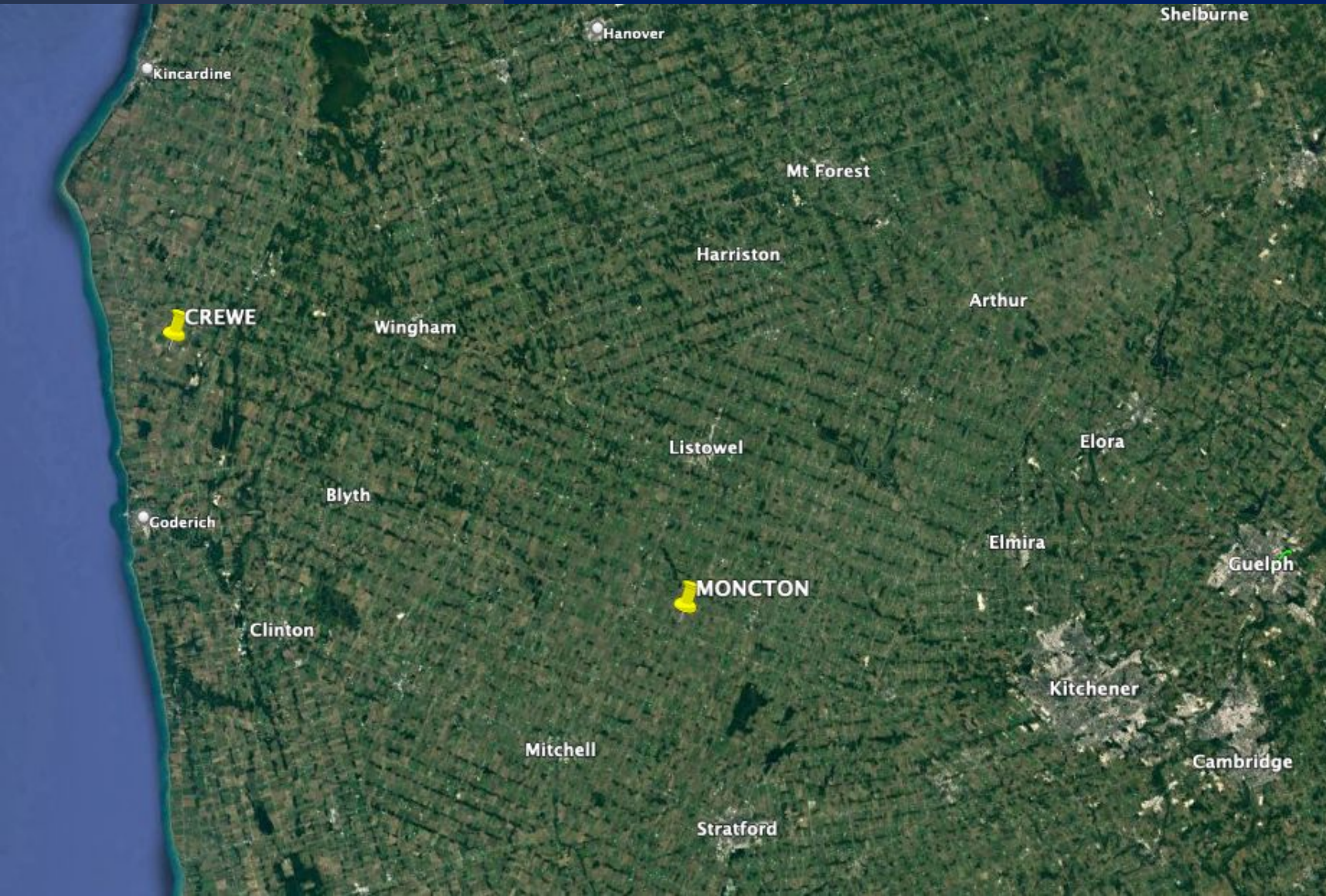
A COUPLE OF PLACES...

Monkton:

- Road is seasonal
- Likely blocked by snow
- 1 hour from KW

Crewe:

- Road is ploughed
- Beware of snow squalls
- Many wind turbines (w lights)
- 2 hrs from KW



If skies are clear and moonless, stay tuned for an excursion.

Evening Sky Highlights - Auriga



10pm EST January 15 2022 Facing Overhead



January Deep Sky Highlights 1

The Charioteer!

* = RASC Finest NGC

Catalogue #	Type	Cons	Details	Difficulty
NGC1798	ocl	Aur	Rich in faint stars. Use low to medium power.	easy
NGC1664	ocl	Aur	Four-H Cluster - large and sparse, 40 stars mag 11 and fainter. Use low power.	moderate
NGC1857	ocl	Aur	6' glow of 40 faint stars hiding at the edge of a larger, loose group of stars	moderate
NGC1788	ocl	Aur	Stars arranged with two parallel rows of brighter stars. About 40 stars.	moderate
Kro 18	ocl	Aur	About two dozen stars of different magnitudes. Faint nebula IC2120 to SW	moderate
Stock 10	ocl	Aur	Sparse 15 or so stars, half brighter than 8th mag. 6th mag binary at the core.	easy
M38	ocl	Aur	Starfish Cluster - gorgeous, rich swarm of 100 stars with clumps near corners	easy
NGC1907	ocl	Aur	Dense, rich cluster. 30 stars in 7' diameter. Use medium to high power.	easy
Stock 8	ocl	Aur	The Spider - Contains carbon star OP Aurigae. Beautiful cup of stars.	easy
IC417	en	Aur	Surrounding Stock 8, brightest just southeast of Phi Aurigae, use UHC filter	difficult
IC410	en	Aur	Emission nebula surrounding NGC1893. Use OIII filter. Contains two globules.	moderate
NGC1893	ocl	Aur	Bold, irregular, loose and scattered spray of stars	easy
Melotte 31	asterism	Aur	The Flying Minnow - a cute little asterism of bright stars in the south of Auriga	easy
IC405	en	Aur	Flaming Star Nebula - AE Aurigae at heart. Use UHC. Requires 8+ inches.	difficult
NGC1931	rn	Aur	Beautiful wedge-shaped reflection nebula around Stock 9. Use no filter.	moderate
Stock 9	ocl	Aur	The Fly - Dense aggregate of stars in nebula core between two brighter stars	easy
M36	ocl	Aur	Pinwheel Cluster/The Frog - Brilliant, several double stars inside.	easy
M37	ocl	Aur	Very rich, very dense. Binary in centre. Some say it is the finest in Auriga.	easy
vdB 65	rn	Aur	Reflection nebula surrounding 10th mag star. Double Struve 834 to south.	moderate
IC2149	pn	Aur	Very small. Use OIII filter and blink technique to identify. Use very high power.	difficult
NGC2281	ocl	Aur	Broken Heart Cluster - Scattered bright stars. Use low power. 50+ members.	easy

Evening Sky Highlights - Orion



10pm EST January 15 2022 Facing South

Graphic created with Stellarium

Orion Nebula Complex



NGC1981

NGC1973/5/7

Mizar, Batil I

M43

Becklin's Star

M42

Hatysa

NGC1980



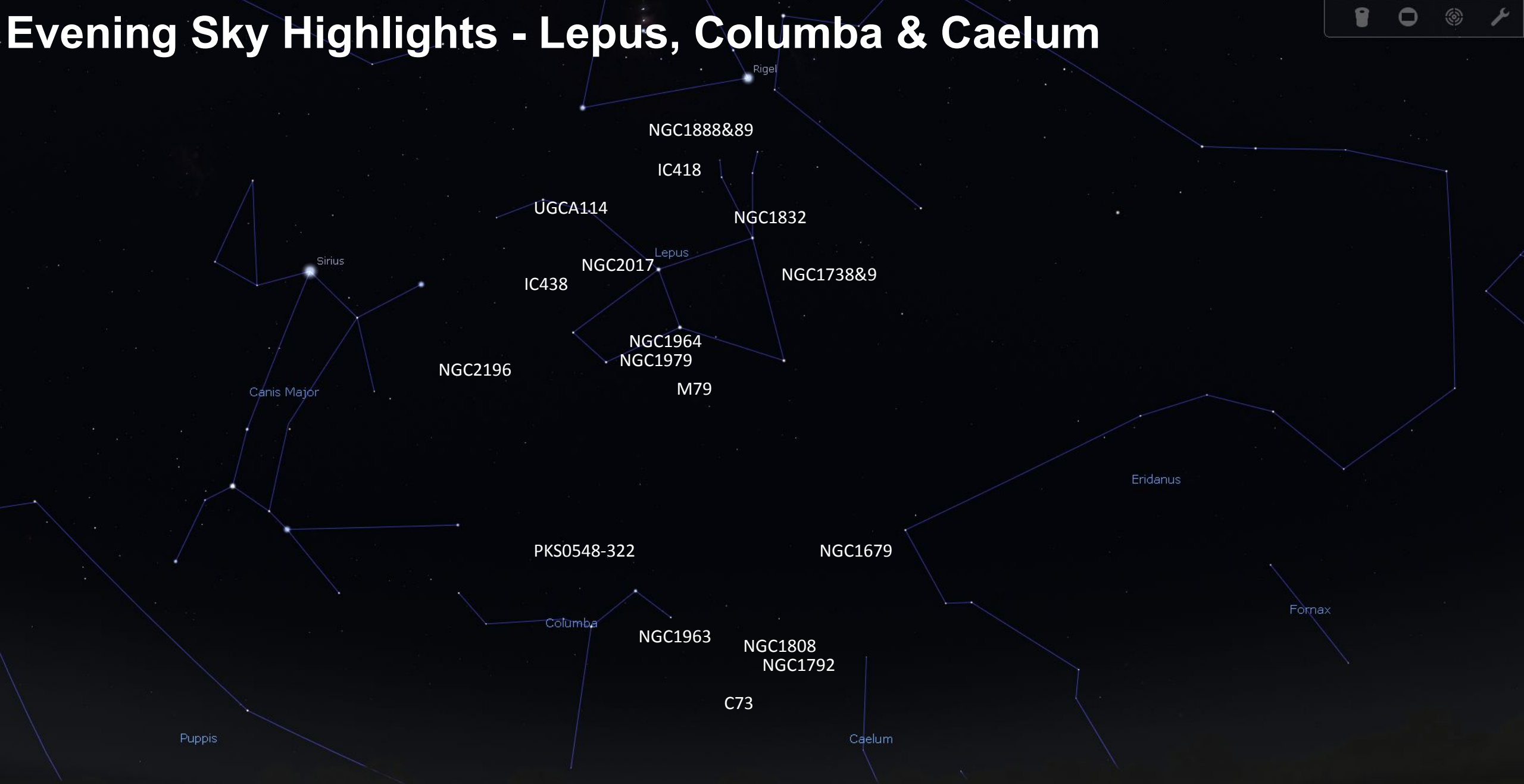
January Deep Sky Highlights 2

The Great Hunter!

* = RASC Finest NGC

Catalogue #	Type	Cons	Details	Difficulty
NGC1662	ocl	Ori	Klingon Bird of Prey Cluster - looks a bit like the fictional spaceship	moderate
J320	pn	Ori	Size 11". Use very high power. Ellipse with foci at either end and diagonal bar	difficult
vdB 37	rn	Ori	Reflection nebula around star V1057Ori, ~mag7.7, use medium power no filter	difficult
Collinder 69	ocl	Ori	Lambda Orionis Cluster - Large oval cluster, dominated by 3 stars in a wide triangle	easy
NGC2022	pn	Ori	Collarbone/Kissing Crescents Nebula - 22"x17" annulus, use high power	moderate
NGC2169	ocl	Ori	The 37 Cluster - 30 members separated into two groups that form the number 37	easy
NGC2163	rn	Ori	3' x 2' bipolar reflection nebula surrounding a young star. Use high power.	difficult
NGC2174/5	en+ocl	Ori	Monkey's Head Nebula - large and diffuse; visible in binoculars under dark skies	moderate
Herschel R.27	en	Ori	Portion of Barnard's Loop - Ghostly oval of nebulosity extending NW from NGC2122	v.difficult
M78	rn	Ori	Bright, round reflection nebula, like a comet with no nucleus	easy
NGC	rn	Ori	Just northeast of M78, smaller and dimmer reflection nebulosity around a star	moderate
NGC2024	en/rn	Ori	Flame Nebula - looks like lips with a dark lane between, needs dark skies	difficult
NGC2023	rn	Ori	10' wide glow of reflection nebulosity around an 8th magnitude star with wisps	difficult
IC434/B33	en/dn	Ori	Horsehead Nebula - very faint, needs dark skies, 12+ inch aperture and HBeta filter	v. difficult
Collinder 70	ocl	Ori	Orion's Belt Cluster - very widely spaced cluster of bright stars, best in binocs	easy
NGC1981	ocl	Ori	Coal Car Cluster - cluster of stars of 6th and 7th mag in a very catching shape	easy
NGC1973/75/77	en+rn	Ori	Running Man Nebula - Three parallel bands of nebulosity like wrinkled silk	moderate
M42	en+ocl	Ori	Great Orion Nebula - No finer emission nebula in the northern skies! Full of detail!	easy
M43	en	Ori	De Mairan's Nebula - Wedge or teardrop of nebulosity surrounding Bond's star	easy
NGC1980	ocl+rn	Ori	Lost Jewel of Orion - Sparse cluster at Iota Orionis with faint milky nebulosity	easy
NGC1999	rn	Ori	13th Pearl Nebula - Round milky annular glow with rays around star. High power.	moderate
NGC1788	rn	Ori	Cosmic Bat Nebula - Fuzzy stellar-like object that swells with averted vision	moderate

Evening Sky Highlights - Lepus, Columba & Caelum



10pm EST January 15 2022 Facing South

January Deep Sky Highlights 3

The Rabbit and the Dove!

* = RASC Finest NGC

Catalogue #	Type	Cons	Details	Difficulty
C73/NGC1851	gcl	Col	Superb globular with large, condensed core. Low altitude makes it tough.	difficult
NGC1792	g(SA(rs)bc)	Col	No distinct central concentration, mottled throughout, very difficult in south	difficult
NGC1808	g((R)SAB(s)a)	Col	Brighter than nearby 1792, some structure and thin brighter core	difficult
NGC1963	asterism	Col	A dozen scattered stars; pretty, but far south in the soup	moderate
PKS0548-322	quasar	Col	Quasar that can be hunted down in scopes with 8+ inches of aperture.	difficult
NGC1679	g(lrrB)	Cae	Interesting but difficult target due to southerly location, has two lobes	difficult
M79	gcl	Lep	Smattering of bright members against blazing core, 5 'arms' form star shape	easy
NGC1979	g(S0)	Lep	Moderately faint, small and round, bright nucleus and stellar core.	moderate
NGC1964	g(SAB(s)b)	Lep	Fairly faint near trio of field stars, fainter stars superimposed.	difficult
NGC1738	g(Sb)	Lep	Interacting with NGC1739. Use 8+ inches aperture. Oval, even brightness.	difficult
NGC1739	g(Sb)	Lep	Extremely faint, small and round. Use 12+ inches aperture.	v. difficult
NGC1832	g(SBb)	Lep	Face on barred spiral. HII regions visible with aperture.	moderate
IC418	pn	Lep	Spirograph Nebula. 12" oval, reddish tinge w/med power. Central star mag 9.9	easy
NGC1954	g(SBc)	Lep	Barred spiral, arms form a ring. Use medium power and 12+ inches aperture.	v. difficult
NGC2017	ocl	Lep	Compact group of relatively bright stars. Pretty.	easy
UGCA114	g(lrr/SBc?)	Lep	Irregular barred spiral, low surface brightness so challenging for small scopes.	difficult
IC438	g(SAc)	Lep	Face-on spiral. Possibly interacting with faint IC2151. Use 8+ inch aperture.	difficult
NGC2196	g(SAab)	Lep	Moderately faint, circular, brightening to moderately sharp 15" concentration.	difficult
NGC1888	g(Sc)	Lep	Arp123 with NGC1889. Elongated SE-NW 3:1 length-width ratio. Use 8+ inch.	difficult
NGC1889	g(E1)	Lep	Faint circular glow, needs 12+ inch aperture.	v. difficult



What's Up? Resources

RASC Observer's Handbook 2023 - The Sky By Month

NASA SVS Moon Viewer: <https://svs.gsfc.nasa.gov/4955>

Stellarium: <https://www.stellarium.org>

The Sky Live: <https://theskylive.com/>

Time and Date: <https://www.timeanddate.com/>

Deep Sky Observer's Companion: <http://www.docdb.net/index.php>

Thank you!