RASC Toronto Centre Members Night - February, 2016 - Observing Targets*

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*see January Observing Targets List for additional excellent targets in the constellations covered below

Emphasis is on the must-sees and some overlooked gems and fun items seen only in winter (i.e., not circumpolar). For deep sky objects "M" designates Messier List object, "C" Caldwell List Object, "NGC" New General Catalogue, "IC" Index Catalogue for nebulae, and "Melotte" Open Cluster Catalogue.

For stars, I give the proper names (spellings may vary) or nicknames, plus Bayer designation (Greek letter plus Latin constellation name) and/or Flamsteed designation (numeral and Latin constellation name), and the visual magnitude "mag". For doubles/multiples I have provided mags, separations "sep" in minutes (') or seconds ("), colours, etc.

O-III and UHC filters will enhance nebulae by darkening surrounding the sky and stars. Planetary nebula benefit especially well, and cloud shapes become more apparent. Place the filter and re-focus after first finding/viewing the object without any filtering.

Monoceros (Monocerotis)

Beta Mon – Triple star system composed of three equally bright (mag 4.6, 5.4, 5.6) hot blue-white stars, sep 7.3" and 10", where the third orbits the other pair

Rosette Nebula / Caldwell 49,50 / NGC2238,2244, etc - In Monoceros, open cluster with bright mag 5.5 nebulosity. Try filtering it!

Plaskett's Star (V640 Mon) – One of the most massive binary stars known (mag 6), discovered by Canadian John Stanley Plaskett in 1922

Seagull Nebula / IC2177 / NGC2327 – Very large (120'x40') and bright (mag 10) nebula containing H-alpha clouds, some blue reflection nebulosity, dust lanes, and stars. Imaging target and try visually with O-III filter

Cone Nebula and Christmas Tree Cluster / NGC2264 - Bright (mag 3.9) cluster of stars in a 30' field (easy in binoculars) near the eastern edge of a large area (60'x30') of tenuous nebulosity. Cone Nebula lies at the bottom (similar setup to the Horsehead)

M50 / NGC2323 – Bright (mag 5.9) open cluster of blue-white stars about 14' across containing string of stars and a heart-shaped clump, plus a nice red giant and a few yellow stars for contrast

C46 / NGC2261 / Hubble's Variable Nebula – Comet-shaped emission and reflection nebula (4'x2') surrounding star R mon. The nebula varies in brightness by up to 2 magnitudes due to dust orbiting the star. 1st object imaged through the 200" Hale telescope in 1949

Gemini (Geminorum)

Castor (Alpha Gem) – A triple! Castor A and B are white mag 2 and 2.9, sep 7". Castor C is a mag 8.8 red dwarf 73" to the south. Might as well look at **Pollux**, too – it's actually brighter, and has a hot Jupiter!

Eskimo Nebula / Caldwell 39 / NGC2392 – A mag 9.7 planetary nebula. Use an O-III filter to make it pop

M35 / NGC2168 – Large (40') and bright (mag 5) open cluster exhibiting structure (star chains and rift). Use binos or low power

Propus / Tejat Prior (Eta Gem) – A close double star (sep 1.4") consisting of an orange giant star mag 6.2 (a pre-Mira variable) and mag 8 yellow star (sometimes appearing as green)

Mekbuda (Zeta Gem) – Line of sight triple system (mags 4, 8, and 11) separated by 84". Yellow giant primary is one of the brightest Cepheid variables (mags 3.6-4.1 over 10.15 days).
Jellyfish Nebula / IC443 – A supernova remnant requiring an O-III filter, sized 30'x15', brighter on the NE edge
Wasat (Delta Gem) – The guide star for the plates with which Tombaugh imaged Pluto in 1930. Nice close double with colour (creamy white and reddish purple) and (mags 3.5 and 8.1) contrast
Medusa Nebula / Abel 21 / PK205+14.1 – Large (12.4'x8.5') faint (mag 10.2) Planetary Nebula with embedded stars. Better at low magnification and O-III filtered

Cancer (Cancri)

M44 / Beehive Cluster / Praesepe / NGC2632 / Mel 88 – Very large (70') and bright (mag 3.1) open cluster, probably a cousin to the Hyades (age, proper motion, stellar composition)
M67 / NGC2682 – Ancient bright (mag 6.1) open cluster containing chains of stars and dark lanes about 25' across. It has moved off the galactic plane. Contains >500 stars, including some blue stragglers
C48 / NGC2775 – Unusual nearly face-on spiral galaxy (4.3'x3.3') with a large, smooth bright core (mag 10.0). Has hosted 5 supernovae in the past 30 years!
Tegmine or Tegmeni / Struve 1196 (Zeta Cnc) – Nice visual triple that is actually a quad! All stars are yellowish (mags 5.6, 5.9, and 6.1) all within 0.8'
Iota Cnc – Easy yellow and blue white double (mags 4 and 6) separated by 30.5"

Western Hydra (Hydrae)

M48 / NGC2548 – Large (30' across) bright (mag 5.5) open cluster in Hydra that is probably Messier's missing M48 visible in binoculars and naked eyes

Lynx (Lyncis)

Intergalactic Wanderer / Caldwell 25 / NGC2419 – The most distant Milky Way Globular Cluster known, at >270,000 light-years, twice as far as the Large Magellanic Cloud. A dim object at mag 9.1, was discovered by W. Herschel in 1788
NGC2683 / UFO Galaxy – High surface brightness (mag 9.8) edge-on spiral galaxy, 9'x2' in size
12 Lyncis / Struve 948 – A Nice white triple (mags 4.5, 6.0, and 7.2) separated 1.7" and 8.7"
19 Lyncis – Easy double of white and bluish stars (mags 5.8 and 6.7) separated by 14.8"
Galaxy Cluster about 35' across centred on **NGC2832**, about 40' south of Alpha Lyncis. An imaging challenge

Camelopardalis (Camelopardalis)

C7 / NGC2403 – Large (23.4'x12') bright (mag 8.5) oblique intermediate Spiral Galaxy. It has hosted a Supernova. Binocular object!
C5 / IC342 – Large (21' across) face-on spiral galaxy with low surface brightness (mag 8.4). Near Milky Way plane and partly obscured by dust. Good imaging target!

Additional Caldwell/Messier Objects (with NGC designation)

C54 / NGC2506 (Mon), C24 / NGC1275 / Perseus A galaxy group, M34 / NGC1039, M76 / NGC650,651 (Per), M35 / NGC2168 (Gem)