

Thunder Bay Centre

Royal Astronomical Society of Canada



Observer's Certificate

Level I



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The Thunder Bay Centre introduced the **Observing Certificate** program in January 2000. The original program has now been modified and divided into two units, *Level I* and *Level II*.

The Thunder Bay Centre's *Observer's Certificate Level I* program is designed for the novice stargazer as an introduction to the night sky.

The purpose of this program is to help the novice stargazer locate and identify the more prominent constellations and stars, planets, along with selected celestial objects and events in the night sky. This program is intended to help the beginner learn their way around the night sky, develop good observing skills and record keeping techniques. This exercise will help the observer to become familiar with using basic star charts along with binoculars and a telescope to observe various objects in the night sky.

Upon completion of the requirements, the *Observer's Certificate Level I* will be presented to the observer at the next general meeting and their achievement mentioned in the Centre's newsletter "**The Northern Sky**".

Once this exercise has been completed you will be ready for the more advanced observing programs such as the Centre's intermediate *Observer's Certificate Level II* as well as those offered through the RASC National's Observing Committee.

Requirements for the *Observer's Certificate Level I* are as follows:

1. You shall not use the "Go-To" function of a computerized mount to find these objects.
2. Star and Moon maps will be useful as an aid to help locate these objects and features.

All observations as recorded in your Observer's Log must include:

1. Object name
2. Time and date of observation (Specify EST, CST, EDT or CDT as well as 12/24 hr. system) and date (DD/MM/YYYY)
3. Diagram and approximate position of object (Direction and Height above the horizon) as required
4. Observing method: Naked eye, Binoculars (record magnification and aperture) or Telescope (type)
5. Appearance of object as observed (Colour, Size, Brightness, etc.) as required
6. Submit observations legibly and organized on paper. The Observing Committee will confirm and sign/date each category on your certificate no later than the next meeting. (Photographic images are acceptable as long as the entire constellation, major stars and object under observation is/are labeled and can be identified during the reviewing session.)
7. When all observing parameters have been completed and signatures obtained, the gold Centre Seal will be awarded and placed on your certificate. This will indicate your achievement and success in this observing program.

Note:

This list of requirements cannot cover all situations that may occur during these observations and certain individuals may have access problems which would limit their ability to complete this certificate. Any deviations from the listed requirements will require approval from the committee prior to submitting results for consideration.

Observing Certificate Level I

Constellations (*N*) (10 Required)

Spring

- Ursa Major
- Leo
- Virgo
- Cancer
- Boötes
- Corona Borealis

Summer

- Lyra
- Cygnus
- Aquila
- Hercules
- Scorpius
- Sagittarius

Autumn

- Cassiopeia
- Perseus
- Pegasus
- Draco
- Ursa Minor
- Andromeda

Winter

- Auriga
- Orion
- Taurus
- Gemini
- Canis Major
- Canis Minor

Prominent Stars (*N*) (10 Required)

Spring

- Arcturus
- Spica
- Mizar and Alcor
- Regulus

Summer

- Vega
- Deneb
- Altair
- Antares

Autumn

- Algol
- Alpheratz
- Markab

Winter

- Capella
- Betelgeuse
- Rigel
- Aldebaran
- Castor
- Pollux
- Sirius
- Procyon

Observing the Moon (15 Required)

Lunar Phases (5)

- Waxing Crescent (*N*)
- First Quarter (*N*)
- Waxing Gibbous (*N*)
- Full Moon (*N*)
- Waning Gibbous (*N*)
- Last Quarter (*N*)
- Waning Crescent (*N*)

Lunar Basins (Seas/Oceans) (5)

- Oceanus Procellarum (Storms) (*N/B*)
- Mare Imbrium (Rains) (*N/B*)
- Mare Serenitatis (Serenity) (*N/B*)
- Mare Tranquillitatis (Tranquillity) (*N/B*)
- Mare Fecunditatis (Fertility) (*N/B*)
- Mare Crisium (Crises) (*N/B*)
- Mare Nectaris (Nectar) (*N/B*)
- Mare Nubium (Clouds) (*N/B*)
- Mare Humorum (Moisture) (*N/B*)
- Mare Frigoris (Cold) (*N/B*)

Lunar Craters (*B/T*) (5)

- Tycho
- Copernicus
- Kepler
- Archimedes
- Alphonsus
- Posidonius
- Theophilus
- Gassendi
- Eratosthenes
- Cleomedes

Planets (4 Required)

- Mercury (*N*)
- Venus (*N*)
- Mars (*N*)
- Jupiter (*N*)
- Saturn (*N*)
- Uranus (*N/B*)

Basic Deep Sky (6 Required)

Spring

- M-44 Cancer (Gal. Cl.) (*N/B*)

Summer

- M-13 Hercules (Glob. Cl.) (*B*)
- Collendar 399 (Coathanger) (asterism) (*N/B*)
- M-8 Sagittarius (Lagoon) (Em. Neb.) (*B*)
- M-22 Sagittarius (Glob. Cl.) (*B*)
- M-16 Sagittarius (Eagle) (Em. Neb.) (*B*)

Autumn

- M-31 Andromeda (Galaxy) (*N/B*)
- NGC 869/884 Perseus (Double Cluster) (*N/B*)

Winter

- M-45 Taurus (Gal. Cl.) Pleiades (*N*)
- M-42 Orion (Em. Neb.) (*N*)
- Hyades Taurus (Open Cl.) (*N*)
- M-35 Gemini (Open Cl.) (*B*)

Other Astronomical Events (4 Required)

- Eclipse of the Moon (Total/Partial/Penumbral)
- Earth Shine
- Occultation (Lunar)
- Planetary/lunar Grouping (3 bodies)
- Aurora Borealis
- Meteor Shower
- Orbiting artificial satellites (at least 3)
- International Space Station
- Iridium Flare
- Comet
- Asteroid

- (*N*) Naked eye
- (*N/B*) Naked eye/Binocular
- (*B*) Binocular
- (*B/T*) Binocular/Telescope
- (*T*) Telescope