

The Royal Astronomical Society Of Canada Thunder Bay Centre



Astrophotographer's Certificate Level I Requirements'

Astrophotographer's Certificate Level I Requirements

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

The purpose of this program is to allow the novice Astrophotographer to display knowledge of the telescope and camera as well as the ability to use software to manipulate the pictures taken. It is expected that the observer has developed good observing skills and record keeping techniques and will build on them in this program.

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

Once this exercise has been completed you will be ready for the more advanced observing programs such as the Centre's Intermediate Astrophotographer's Certificate Level II.

Upon completion of the requirements, the Astrophotographer's Certificate Level I will be presented to the observer at the next general meeting and their achievement reported in the Newsletter.

Participants who may wish to present their project experience to the group will be given time at a meeting or space in the newsletter.

Astrophotographer's Certificate Level I Requirements'

General

1. You are allowed to use the "Go-To" function of a computerized mount to find and track these objects, but are expected to report on the telescope's alignment and accuracy. If you do use the "Go - To" function of your mount your submission will be acceptable for only the Astrophotographer's Certificate Level I and not for the Observer's Certificate Level I.
2. For the level I certificate the pictures are expected to be simple time exposures and not multiple photos stacked together.
3. Items listed with only a (C) or (T) must be photographed using the method specified.
4. When (T) telescope only is specified a camera with a telephoto lens may be used.
5. A Digital recording of the pictures carefully referenced to the log entries and requirements list must be handed in with the required materials, or if the participant wishes a hard copy of the pictures and required information may be submitted.
6. Your observer's log or pertinent portions thereof must be submitted with the pictures.
7. If your log is submitted in digital format it should be in Rich Text Format (rtf). Pictures should be submitted as jpeg files.
8. All observations as recorded in your Observer's Log must include:
 1. Object name
 2. Time and date of observation (Specify EST, EDT, CST, or CDT as well as 12/24 hr. clock) and (Date DD/ MM/YYYY)
 3. Telescope, camera and software used
 4. Details of telescope alignment and accuracy including, type of alignment, alignment stars, and accuracy or stated error if available.

Astrophotographer's Certificate Level I Requirements':

Constellations

1. Constellation pictures should be taken with a camera. The camera may be mounted on a telescope for tracking.
2. Constellation pictures must be clearly labelled and have lines added to show the shape of the constellation
3. The major stars must be named.
4. The Name of the constellation must appear near the centre of the constellation.
5. The name of the photographer along with the date and time the picture was taken and the model of camera, lens, and or telescope used should appear at the bottom of the photograph.

Prominent Stars

1. Prominent Star pictures may be taken with either a camera or through a telescope.
2. The name of the star must be clearly labelled and must have enough clearly labelled stars around it to identify the star in question.
3. Other major stars in the picture must be named.
4. The name of the photographer along with the date and time the picture was taken and the model of camera, lens, and or telescope used should appear at the bottom of the photograph.

Observing the Moon

1. Lunar Phase pictures should be taken with a camera. The camera may be mounted on a telescope for tracking.
2. Lunar Basin pictures must be taken through a telescope.
3. Lunar Crater pictures must be taken through a telescope.
4. The subject of the picture must be clearly labelled and prominent features in the picture must also be labelled.
5. The name of the photographer along with the date and time the picture was taken and the model of camera, lens, and or telescope used should appear at the bottom of the photograph.

Solar System

1. Planet pictures must be taken through a telescope.
2. The name of the planet must be clearly labelled.
3. A clearly labelled nearby constellation or major stars must be shown, if available, or lacking that, enough information must be provided to clearly identify the object.
4. The name of any prominent stars in the pictures must be labelled.
5. The name of the photographer along with the date and time the picture was taken and the model of camera, lens, and or telescope used should appear at the bottom of the photograph.

Basic Deep Sky

1. Basic Deep Sky pictures must be taken with a telescope.
2. The name of the photographer along with the date and time the picture was taken and the model of camera, lens, and or telescope used should appear at the bottom of the photograph.

Landscape Pictures

1. Landscape pictures must be taken with camera.
2. Pictures may be taken at any time, night or day.
3. These pictures are expected to show landscape and astronomical events such as moonrise over the Sleeping Giant or the Moon and Jupiter with landscape in the foreground.
4. The name of the photographer along with the date and time the picture was taken and the model of camera, lens, and or telescope used should appear at the bottom of the photograph.

Other Astronomical Events

1. Other Astronomical Event pictures may be taken with either a camera or through a telescope.
2. The event or feature must be clearly labelled.
3. The name of any prominent stars in the pictures must be labelled.
4. Multiple events of a similar nature may be used. i.e. you may use more than one meteor shower.
5. The name of the photographer along with the date and time the picture was taken and the model of camera, lens, and or telescope used should appear at the bottom of the photograph.

Constellations (C) (10 Required)

<u>Spring</u>	<u>Summer</u>	<u>Autumn</u>	<u>Winter</u>
Ursa Major	Lyra	Cassiopeia	Auriga
Leo	Cygnus	Perseus	Orion
Virgo	Aquila	Pegasus	Taurus
Cancer	Hercules	Draco	Gemini
Boötes	Scorpius	Ursa Minor	Canis Major
Corona Borealis	Sagittarius	Andromeda	Canis Minor

Prominent Stars (C) (T) (10 Required)

<u>Spring</u>	<u>Summer</u>	<u>Autumn</u>	<u>Winter</u>	
Arcturus	Vega	Algol	Capella	Castor
Spica	Deneb	Alpheratz	Betelgeuse	Pollux
Mizar and Alcor	Altair	Markab	Rigel	Sirius
Regulus	Antares		Aldebaran	Procyon

Observing the Moon (15 Required)

Lunar Phases (C) (5 Required)

- Waxing Crescent
- First Quarter
- Waxing Gibbous
- Full Moon
- Waning Gibbous
- Last Quarter
- Waning Crescent

Lunar Basins (Seas/Oceans) (T) (5 Required)

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

Lunar Craters (T) (5 Required)

Tycho	Posidonius
Copernicus	Theophilus
Kepler	Gassendi
Archimedes	Eratosthenes
Alphonsus	Cleomedes

Solar System (T) (4 Required)

Mercury
Venus
Mars
Jupiter
Saturn
Uranus
Neptune

Basic Deep Sky (T) (5 Required)

Spring

M-44 Cancer

Summer

M-13 Hercules

Collendar 399 (Coathanger)

M-8 Sagittarius (Lagoon)

M-22 Sagittarius

M-16 Sagittarius (Eagle)

Autumn

M-31 Andromeda

NGC 869/884 Perseus

Winter

M-45 Taurus Pleiades

M-42 Orion

Hyades Taurus

M-35 Gemini

Landscape Pictures (C) (T) (5 Required)

See requirements above for description

Other Astronomical Events (C) (T) (5 Required)

Eclipse of the Moon (Total/Partial/Penumbral)

Earth Shine

Planetary/lunar Grouping (3 bodies)

Aurora Borealis

Meteor Shower

Orbiting artificial satellites (at least 3)

International Space Station

Comet

Lunar Occultation

Iridium Flare