

Trusted Astronomy Resources on the Net

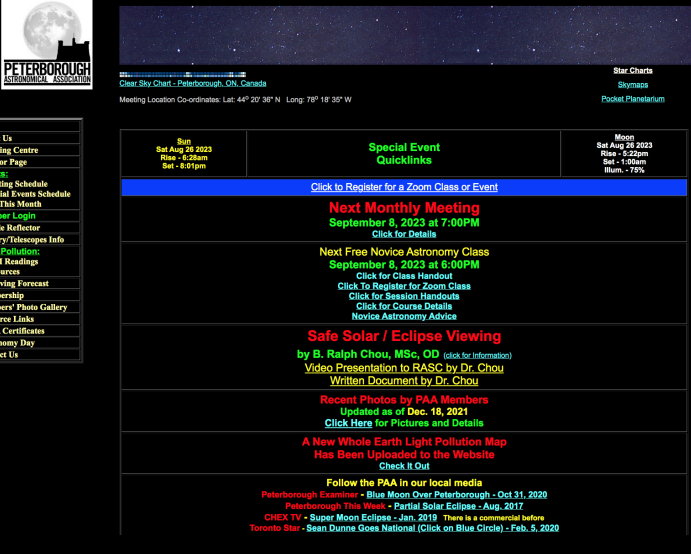


Astronomy on
the Web

Peterborough Astronomical Association
Novice Astronomy Class # 16
September 8, 2023
Brett Hardy

Astronomy Clubs

- Peterborough Astronomical Association
 - peterboroughastronomy.com
- Local astronomy activities & info.



Meeting Location Co-ordinates: Lat: 44° 20' 35" N Long: 78° 19' 35" W

| | | |
|--|---------------------------------|---|
| Sun Sat Aug 26 2023 Rise - 6:29am Set - 8:01pm | Special Event Quicklinks | Moon Sat Aug 26 2023 Rise - 5:22pm Set - 1:03am Illum. - 78% |
| Click to Register for a Zoom Class or Event | | |
| Next Monthly Meeting September 8, 2023 at 7:00PM Click for Details | | |
| Next Free Novice Astronomy Class September 8, 2023 at 8:00PM Click for Class Handout Click To Register for Zoom Class Click for Session Handouts Click for Course Details Novice Astronomy Advice | | |
| Safe Solar / Eclipse Viewing by B. Ralph Chou, MSc, OD <small>(see for information)</small> Video Presentation to RASC by Dr. Chou Written Document by Dr. Chou | | |
| Recent Photos by PAA Members Updated as of Dec. 18, 2021 Click Here for Pictures and Details | | |
| A New Whole Earth Light Pollution Map Has Been Uploaded to the Website Click It Out | | |
| Follow the PAA in our local media Peterborough Examiner - Blue Moon Over Peterborough - Oct 31, 2020 Peterborough This Week - Partial Solar Eclipse - Aug. 2017 CHCA TV - Super Moon Eclipse - Jan. 2018 There is a commercial before Toronto Star - Sean Dunne Goes National (Click on Blue Circle) - Feb. 3, 2020 | | |

Astronomy Clubs

- Royal Astronomical Society of Canada
 - rasc.ca
- Local (Belleville, Kingston, Toronto) & National



Observation Planning

- The Sky Live
 - theskylive.com
- Planets, planetary satellites, comets, asteroids
- Interactive planetarium
- Constellations
- Night Guide



Observation Planning

- Telescopius
 - telescopius.com
- Planets, planetary satellites, comets, asteroids
- Interactive planetarium
- Constellations
- Night Guide

The screenshot shows the Telescopius website interface. At the top, it says "What's in the Sky Tonight? Toronto". The main content area is divided into several sections:

- OBSERVATION SETTINGS:** Includes a "WAXING GIBBOUS MOON" indicator, a "DAYLIGHT" bar, and "AVERAGE WEATHER FOR SEP 2 NIGHT" with a "cloudy excellent" forecast.
- TELESCOPIUS TARGETS:** A grid of objects with details:
 - Barringer's Galaxy (NGC 6922):** Magnitude 15.4, size 8.8, at 00:17 pm, alt 27°, az 10.16 pm.
 - Spindle Galaxy (M 102):** Magnitude 6.0, size 9.8, at 00:27 am, alt 70°, az 01:34 am.
 - Fireworks Galaxy (NGC 6946):** Magnitude 11.2, size 9.8, at 11:00 pm, alt 41°, az 11:00 pm.
- TELESCOPE SIMULATOR:** A section with a list of features:
 - Check framing with your telescope setup.
 - 15+ image surveys.
 - Plan mosaics and get frame coordinates easily.
 - Check eyepiece and binocular FOV.
 - Ready for partner observatories.
- LATEST ASTROPHOTOGRAPHY:** A section titled "ASTROPHOTOGRAPHY HOOTING" with a "100% Unlimited and Free" badge and a "Upload your astrophotography" button.
- UPCOMING EVENTS:** A section listing "Mon 4: Jupiter 3.3'S of Moon" and "Tue 5: Perseids 1.27N of Moon".

Observation Planning

- Astronomy by Night
 - astronomybynight.ca
- Canadian

The screenshot shows the Astronomy by Night website. At the top, it says "Astronomy by Night" with a logo and navigation links for "Donations", "Astrophoto of the week", and "Categories".

- Featured Article:** "How to Photograph the Solar Eclipses" by Alan Dyer, with a "Buy the ebook" button.
- Observing Section:** "This Week's Night Sky: August 18-24, 2023". The text states: "Three large open star clusters will be visible through binoculars this week, and four small constellations will be sitting high in the southeastern sky. Plus, check out the 'stinging' Scorpion and the first quarter Moon!" It is attributed to "By Chris Vaughan - August 10, 2023".
- Submission Section:** "Submit your AstroPhoto of the Week" with a "Submit your photo" button.
- Image Gallery:** Three images are shown with captions:
 - Astrophotography:** A close-up of a star cluster.
 - Observing:** A night sky with constellation lines.
 - Uncategorized:** A group of people at an outdoor observing event.

Observation Planning

- ISS Transit Finder
 - transit-finder.com
- International Space Station transits
 - General, Moon & Sun

The screenshot shows the 'ISS TRANSIT FINDER' web application. At the top, there are links for 'Home', 'Help', and a 'Donate' button. A blue banner at the top center reads '2021 September 14th: Hubble and Tiangong transit predictions. Click for more information.' Below this, the interface is divided into three main sections:

- 1. Set your location (latitude, longitude, elevation)**: This section contains three input fields: φ (LATITUDE) in degrees, λ (LONGITUDE) in degrees, and h (ELEVATION) in meters. Below these are two buttons: 'Auto-detect' and 'Select from map'.
- 2. Set the time span (start and end dates)**: This section has two date pickers. The first is set to '2023-09-01' and the second to '2023-09-22'.
- 3. Set your preferred travel distance (kilometers)**: This section has a distance input field set to '80' kilometers.

At the bottom of the form is a large 'CALCULATE' button. Below the button is a checkbox that is checked, with the text: 'NEW: Also search for additional satellites (Hubble, Tiangong Space Station)'.

Observation Planning

- Jet Propulsion Laboratory (JPL) HORIZONS
 - ssd.jpl.nasa.gov/horizons.cgi
- Ephemerides generator
- Planets, planetary satellites, comets, asteroids

The screenshot shows the 'JPL HORIZONS Web-Interface' from the Jet Propulsion Laboratory. The header includes the NASA logo, 'Jet Propulsion Laboratory California Institute of Technology', and a link to 'View the NASA Portal + Center for Near-Earth Object Studies'. A navigation menu at the top lists: JPL HOME, EARTH, SOLAR SYSTEM, STARS & GALAXIES, and TECHNOLOGY. Below the menu is a banner for 'Solar System Dynamics' with sub-links: BODIES, ORBITS, EPHEMERIDES, TOOLS, PHYSICAL DATA, DISCOVERY, FAQ, and SITE MAP.

The main content area is titled 'HORIZONS Web-Interface' and contains the following information:

This tool provides a web-based limited interface to JPL's HORIZONS system which can be used to generate ephemerides for solar-system bodies. Full access to HORIZONS features is available via the primary telnet interface. HORIZONS system news shows recent changes and improvements. A web-interface tutorial is available to assist new users.

Current Settings

- Ephemeris Type [change]: **OBSERVER**
- Target Body [change]: **Mars [499]**
- Observer Location [change]: **Geocentric [500]**
- Time Span [change]: **Start=2021-04-23, Stop=2021-05-23, Step=1 d**
- Table Settings [change]: **defaults**
- Display/Output [change]: **default (formatted HTML)**

Target Body

Lookup the specified body: optionally limit to all bodies (no limit)

or choose from a list of:

or specify 1-750 sets of SGPA/SDP4 TLEs (Two-Line Elements) in standard format to define an Earth-orbiting spacecraft not already available in Horizons

The footer contains: 'ABOUT SSD', 'CREDITS/AWARDS', 'PRIVACY/COPYRIGHT', 'GLOSSARY', and 'LINKS'. It also features the 'FIRSTGov' logo with the tagline 'Your First Click to the U.S. Government', the date '2021-Apr-23 19:40 UT (server: date/t:line)', the NASA logo, and contact information: 'Site Manager: Ryan S. Park' and 'Webmaster: Alan B. Chamberlin'.

Observation Planning

- Sky Maps
 - skymaps.com/downloads.html

The screenshot shows the 'The Evening Sky Map' page on the Sky Maps website. The page features a large circular star map for the month of November 2023. Text on the page describes the map as a 2-page monthly guide suitable for all sky watchers. It also promotes recommended books and products for skywatchers, including 'The Night Sky' and 'The Backyard Astronomer's Guide'. Navigation links for Home, Services, Store, Downloads, Articles, and Help are visible at the top.

Observation Planning

- Rio Tinto Alcan Planetarium's Pocket Planetarium
 - <https://espacepourlavie.ca/en/pocket-planetarium>

The screenshot shows the 'The Pocket Planetarium' page on the website 'espace pour la vie montréal'. The page features a large star map of a constellation. Text on the page describes the 'Pocket Planetarium' as a seasonal astronomical information bulletin. It lists the current issue as 'Summer 2023 Issue (1.8MB PDF document)' and provides links to archived issues for Spring 2023 and Winter 2022-2023. The website header includes navigation menus for 'Planning your visit', 'Exploring our Spaces', 'Further reading', 'Get involved', 'Kids and teachers', and 'Scientific research'.

Observation Planning

- Government of Canada
 - weather.gc.ca/astro/index_e.html
- Astronomy tailored weather
- Coordinated Universal Time (UTC)
 - World Time Buddy
 - worldtimebuddy.com

Astronomy Information

- Heavens Above
 - heavensabove.com
- Satellite data
- Space events
- Customizable

Astronomy Information

- Spaceweather
 - spaceweather.com
- Current Sun, aurora & space conditions
- Subscribe

The screenshot shows the spaceweather.com website. At the top, there's a navigation bar with links for 'AURORA ALERTS', 'SUBMIT YOUR PHOTOS', 'CONTACT US', 'SUBSCRIBE', 'FLYBYS', and 'EARTH TO SKY'. The main content area is divided into several sections:

- Current Conditions:** Displays solar wind speed (557.6 km/sec), density (9.31 protons/cm³), and more data. It also shows X-ray Solar Flares (8-hr max: C1 0926 UT Sep02, 24-hr: M3 0713 UT Sep02) and the Daily Sun (02 Sep 23) with a sunspot number of 83.
- What's up in space:** Features a 'WEEKEND GEOMAGNETIC STORM WATCH' for a minor G1-class storm on Sept. 2nd, and a note about an AI Free Zone.
- Archives:** A dropdown menu for selecting months and years.
- Right sidebar:** Includes 'REMOTE ASTROPHOTOGRAPHY', 'YOUNG'S PHOTO GALLERIES', 'AvertedImagination', and 'MDJ Camp under Sahara stars on Morocco Desert Tours'.

Astronomy Information

- American Meteor Society
 - amsmeteors.org
- Recent activity
- Meteor showers
- Citizen science

The screenshot shows the American Meteor Society website. The main header includes the organization's name and logo. Below the header, there's a navigation menu with links for 'Home', 'News', 'Photos & Videos', 'Meteors', 'Fireballs', 'Programs', 'Resources', 'About AMS', and 'Contact'.

The main content area features a large image of a meteor streaking across a starry night sky. Below the image, the text reads: "Meteor Activity Outlook for September 2-8, 2023".

On the right side, there are several informational boxes:

- Report a fireball:** A call to action for reporting bright shooting stars.
- Active Meteor Showers:** A section for the Orionids meteor shower, active from September 20th to November 22nd.
- Major Showers to come:** A list of upcoming showers including the Orionids, Southern Taurids, and Northern Taurids.

Astronomy News Source

- SPACE.com
 - space.com
- Forums

Astronomy News Source

- EarthSky
 - earthsky.org
- Earth & Space science

Astronomy News Source

- Universe Today
 - universetoday.com
- Weekly newsletter
- Podcast

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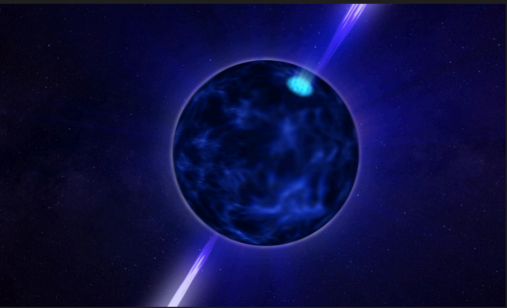
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POSTS

SEPTEMBER 2, 2023 BY BRIAN ROBERLEIN

Astronomers are Hoping the Event Horizon Telescope saw Pulsars Near the Milky Way's Supermassive Black Hole



Visualization of a fast-rotating pulsar. Credit: NASA's Goddard Space Flight Center Conceptual Image Lab


Astronomy Magazines

- Sky & Telescope
 - skyandtelescope.com
- International coverage
- Monthly


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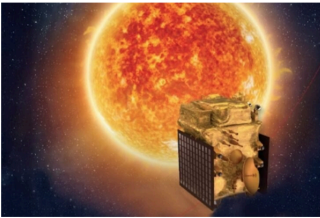


CELESTIAL NEWS & EVENTS [2]
This Week's Sky at a Glance, September 1 – 10
BY ALAN MACROBERT | SEPTEMBER 1, 2023



SKY TOUR ASTRONOMY PODCAST [2]
September Podcast: Explore the Summer Triangle
BY J. KELLY BEATTY | SEPTEMBER 1, 2023






ASTRONOMY IN SPACE WITH DAVID DICKINSON [2]

INDIA LAUNCHES ADITYA L1 SOLAR OBSERVATORY

BY DAVID DICKINSON | SEPTEMBER 2, 2023

India's first dedicated solar science mission Aditya L1 heads spaceward.

CONTINUE READING



ECLIPSE COUNTDOWN

CELESTIAL NEWS & EVENTS [2]
The Moon Is "Blue" This Wednesday...Or Is It?
BY DIANA HANNIKAINEN | AUGUST 29, 2023

SOLAR SYSTEM [2]
Rubble-Pile Asteroid Bennu Has Layers
BY JEFF HECHT | AUGUST 29, 2023

STELLAR SCIENCE [2]
Fast Radio Burst Roundup
BY AAR NOVAI | AUGUST 28, 2023

THIS WEEK'S SKY AT A GLANCE [2]
This Week's Sky at a Glance, August 25 – September 3
BY ALAN MACROBERT | AUGUST 26, 2023

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- Astronomy
 - astronomy.com
- International coverage
- Monthly

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Will humans ever go to Mars?
HUMAN SPACEFLIGHT

Mystery of strobing pulsar may be solved
EXOTIC OBJECTS, SCIENCE

Marilyn Lillie Lovell, wife of astronaut Jim Lovell, dies at 93
HUMAN SPACEFLIGHT, SPACE EXPLORATION

Could the clouds of Venus support life?
SOLAR SYSTEM

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 - skyatnightmagazine.com
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- Monthly
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BBC Sky at Night MAGAZINE

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Get ready for the 29 September Harvest Moon, 2023's last supermoon
Advice

Activity on the Sun is responsible for Neptune's clouds disappearing, say astronomers
Astronomy news

What's new? Russia's Luna 25 spacecraft crashes into the Moon

How the Sun's powerful outbursts affect life on Earth

Patrick Moore's guide to observing Saturn with a telescope

Scientists devise rules for playing a football match on the Moon

Meteor showers | When the next one is, and how to see it

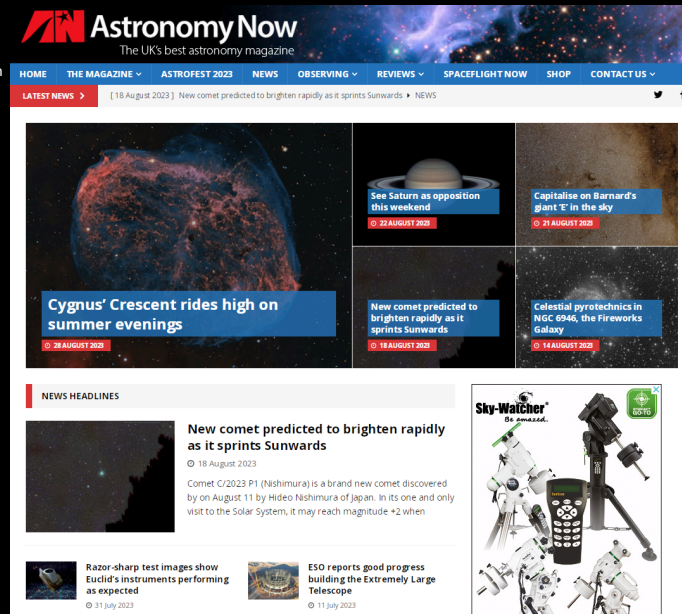
Webb Telescope captures dying star known as the Ring Nebula
Science

Catch Comet C/2020 V2 ZTF in the pre-dawn sky in August
Advice

Supermoons - what they are and when the next one is visible
Science

Astronomy Magazines

- Astronomy Now
 - astronomynow.com
- European flavour
- Monthly



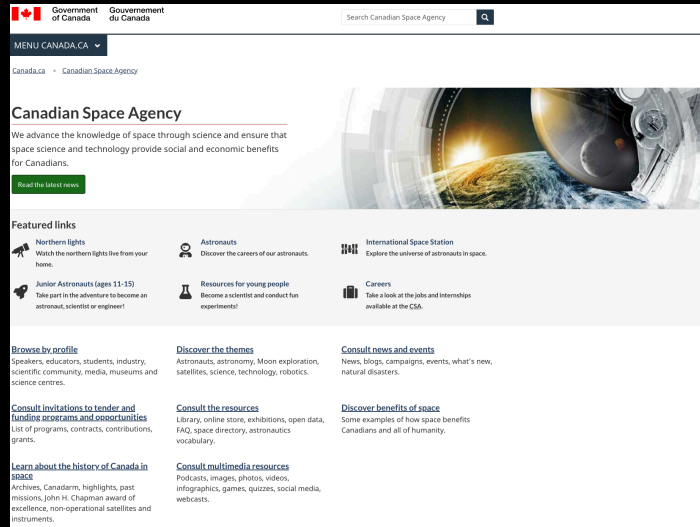
Astronomy & Science Podcasts

- Downloadable audio programs
 - The Infinite Monkey Cage
 - The Actual Astronomy Podcast *
 - Big Picture Science
 - Planetary Radio *
 - Quirks & Quarks
 - StarTalk
 - Universe Today *
 - SpaceTime *
 - Sky at Night Magazine: Radio Astronomy *
 - Astronomy Cast *
 - The Guardian: Science Weekly
 - The Life Scientific
 - The Naked Scientists



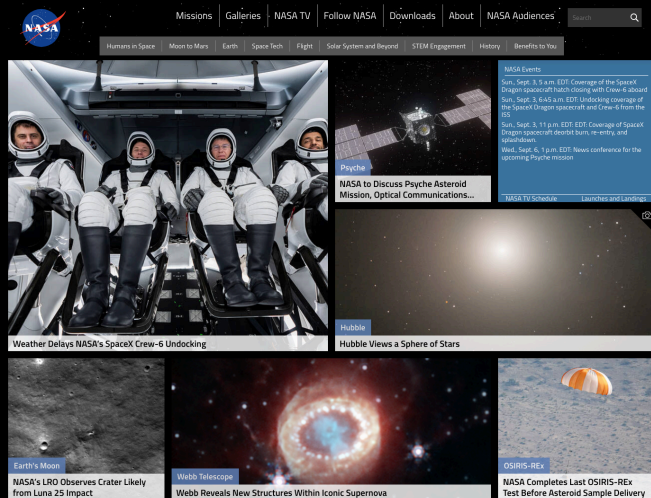
Agency Information

- Canadian Space Agency (CSA)
 - asc-csa.gov.ca/eng/Default.asp
- Canada's space programme



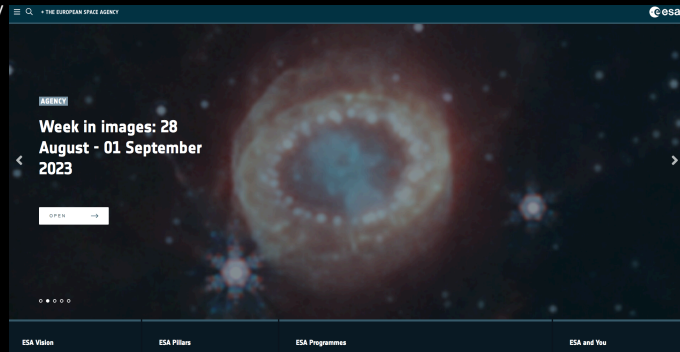
Agency Information

- National Aeronautics and Space Administration (NASA)
 - nasa.gov
- Wealth of information



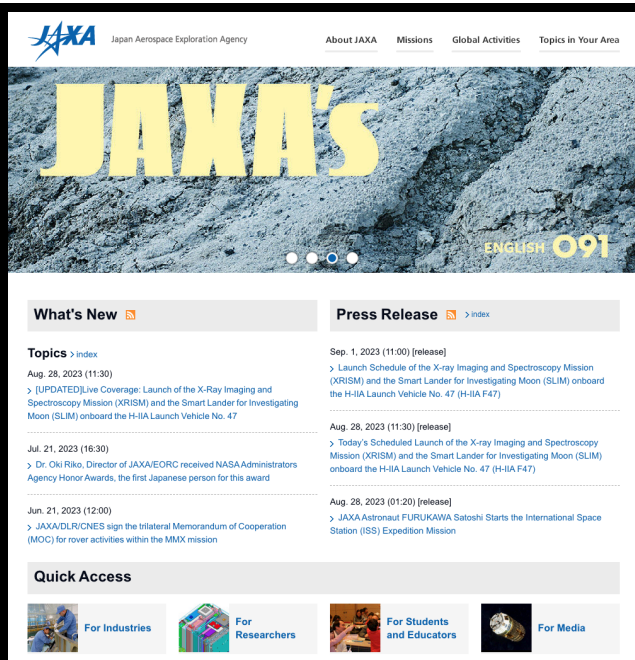
Agency Information

- European Space Agency
 - esa.int
- European Interests



Agency Information

- Japan Aerospace Exploration Agency (JAXA)
 - global.jaxa.jp
- Japanese space program



Agency Information

- China National Space Administration (CNSA)
 - cnsa.gov.cn/english/
- Chinese interest in space

Astronomy Tools

- Bintel Astronomy Calculator
 - bintel.com.au
- Eyepiece & camera field of view simulator

Preview Targets by Relative Scale

Astronomy Tools

- Time & Date
 - timeanddate.com
- Lunar & solar eclipse simulator

