Regulus

Newsletter of the RASC Kingston Centre

Vol. 50, No. 1 January 2023

The Orion Nebula (M42)

On the Horizon ....

Centre Meetings
Queen's University Ellis Hall Room 226
11 January 2023 - hybrid
8 February 2023 - hybrid

Centre meetings occur on the second Wednesday of every month at 7pm EST. More details on p.4.

If attending in person please wear your mask!

Queen's Observatory Open House - Ellis Hall
21 January 2023
18 February 2023
18 March 2023

For more information visit us online
https://kingston.rasc.ca

In this issue ...

President's Nook

Kim Hay

The New year of 2023 is upon us, and we are looking forward, to our Hybrid meetings and gatherings. Our first meeting will be on January 11th,7:00 p.m. in Room 226 Ellis Hall, Queen's University. After over two plus years of ZOOM only, we are sticking our toes into an in-person meeting, with ZOOM capabilities. Our guest speaker will be Scott Young speaking on "Dome @ Home: Astronomy Talk shows for the Virtual Astronomy Community."

Though we are in a new year, we have lost friends in the last part of 2022 who were part of our Astronomy family. Di Bartlett, who helped with many gift baskets at our Christmas dinners and Fall ' N' Stars events. Always there to support past member Hank Bartlett and his many Solar and Meteor Observing events. Mark Coady who was a strong voice in Light Pollution at the National and local level passed away on November 29, 2022. Mark was also the RASC KC Chair of the Fall'N'Stars for many years, chairing for both Kingston and Belleville. Also a member of the Peterborough Astronomical Association. He was President of the PAA, a Ham Radio Operator VE3LJQ, and an ARES member.

Looking forward to the coming months, we have speakers lined up until April. We would like your input on what topics you would like to see covered for the Monthly Meetings. Please let us know at kingston@rasc.ca

The Executive has some plans in place for the members in 2023. We are still discussing and firming up dates, so we will get back to you when done. The Societies EPO (Education & Public Outreach) Committee has been meeting on ZOOM for a few months with presentations from Centres on their activities and how we can all create programs with helping each other. Kingston presented their talk on Dec. 19, 2022. January to March will have presentations from the rest of Ontario and all the Western and Northern Centres.

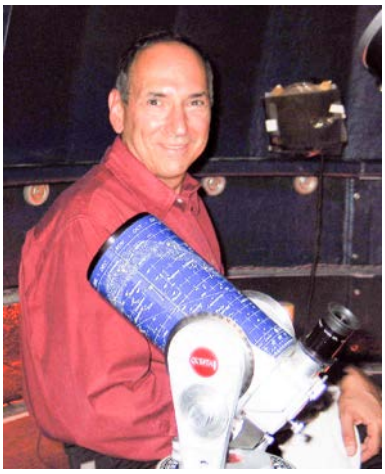
Big Outreach events coming up in 2023/2024 is the Total Solar Eclipse (TSE). Bruce Elliot and I, have been attending joint meetings with Queen's University and RMC on what we will do locally for this event. Bruce has been attending the National TSE meetings. We will be getting Solar glasses for the events. Volunteer's will be needed as the dates get closer; I know we can count on you! Till next time, Keep Looking up!

Editor's Eyepiece

Andrew B. Godefroy

Having recently read Alan Stern and David Grinspoon's excellent book on the mission to explore Pluto (see p.8 for details) I was reminded yet again that with every challenge comes the possibility of great opportunity. These past few years have definitely challenged us all, yet at the same time being stuck at home gave many the opportunity to slow down, look up, and connect (or reconnect) with the night sky. Since I joined the Kingston Centre, I've been grateful to be part of a wonderful group of folks who have inpsired me in many ways, whether it be Kim's leadership, Kevin's support, Richard's knowledge, or David's poetry. It is a wonderful reminder that every member has their own connection to the night sky, and that together, as a centre we can come together to share that opportunity in many ways. Enjoy this month's Regulus, and please don't hesitate to keep in touch!

On the Cover: RASC member Shelley Jackson captured this great shot of M42 and company last month from her new home in Athens, Ontario. Tech details: Askar 200mm FL astrograph lens; 30mm guide scope; ZWO 120 mono guide camera; ZWO ASI294MC pro one shot colour CMOS colled to -Zero C. ZWO EAF with Askar focus kit; Lpro filter; 7.25 hours of data under Bortle 4 skies, stacked and processed with PixInsight.



"When sorrows come, they come not single spies, But in battalions."

(Hamlet 4.5.76-77)

This column begins with a delightful quotation from Hamlet, where King Claudius reflects on the deaths of Hamlet's father, Polonius, and the madness of Ophelia. In this lonely period of my own life, the one constant I have is being able to continue doing the stargazing that I love so much. In recent months, the losses of Don Machholz, Constantine Papacosmas, and Wendee have tested the strength of observing the night sky as never before. But I must add to this the passing of my closest friend from my youth, Carl Jorgensen, on October 18. Of these four transitions that occurred late this year two of them—Don and Carl, both died from COVID-19. This is strong evidence that we are nowhere near being done with this dreadful illness.

Our lifelong friendship began in November of 1963. I had just returned from a 14-month stay at the Jewish National Home for Asthmatic Children in Denver. At the observatory of the Royal Astronomical Society of Canada in Montreal, Isabel Williamson introduced "young Carl Jorgensen" to "young David Levy" and our friendship never wavered over 59 stargazing years after that.
We both especially enjoyed observing shooting stars. In the late summer of 1965 Carl and I were counting Perseid meteors (that all seemed to radiate from the constellation of Perseus) when Carl began to sing to himself the lyrics of a newly released song. Carl went on and on under that clear sky. "Carl," I asked, "what are you singing?"

"Bob Dylan's new song, 'Like a Rolling Stone.'"

"How long is this song supposed to last?"

"About six minutes."

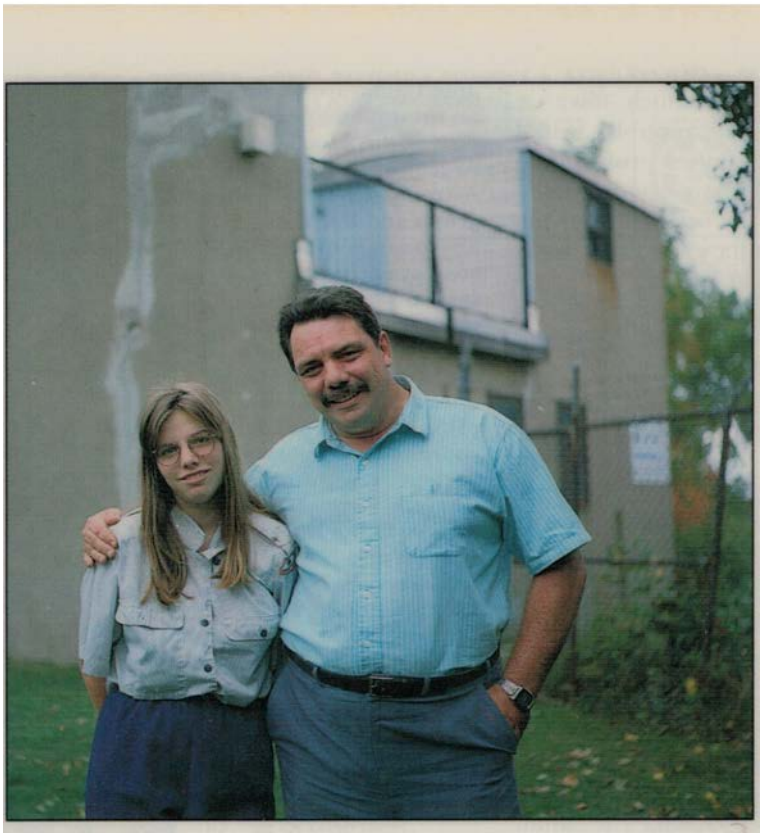
"Carl, you've been singing it for over half an hour." By the next time Carl and I met for observing, I had become a staunch Dylan fan as well.

In March 1976, those of us who liked comets were still reeling from the failure of Comet Kohoutek to live up to expectations. Another comet, found by Richard M. West, was supposed to be in the predawn sky, and Carl drove me out to see it. As we drove into a darker sky south of Montreal, I looked out past Carl's window and saw a magnificent comet rising in the east. Carl reacted to my exclamation: "OK, we'll find a spot, set up the telescope, and try to find it."

"Carl, just look to your left!" Carl glanced out his window, and nearly drove the car off the road. What an unforgettable morning that was.

Carl enjoyed a lifelong interest in double stars. His favorite (and mine) was a beautiful triple star in the constellation of Cepheus. Known as Struve 2816, it is a magnificent triple sun. It is easy to find and wonderful to watch.

It is particularly evocative now. "Doubt that the stars doth shine," Hamlet might have complained, but I think that even he would enjoy being with Carl to enjoy the sight of that lovely star.



Carl Jorgensen and his eldest daughter Christine, sharing a moment in front of the Isabel K. Williamson Observatory c.1990s. Photo by David H. Levy.

Centre News and Updates

Anything to do with the centre and its work could be included in these pages. If you have anything you want to share, please don't heasitate to contact the editor, Andrew Godefroy, at andrew.godefroy@mac.com. We look forward to hearing from you!

Welcome new members!

On behalf of the centre President, welcome to the RASC Kingston Centre:

David Parsons
Robert Crombie
Lawrence McAlpine

Announcements

A reminder that if your membership is coming due or has already expired, please renew it at the earliest opportunity at https://secure.rasc.ca

The RASC Kingston Centre guest speaker for the January 11, 2023, hybrid meeting will be the Manitoba Museum's Planetarium Astronomer, Scott Young. When COVID put a halt to onsite activities, Scott led the development of several digital astronomy initiatives including the popular DOME@HOME program. This is a presentation not to be missed!

Stay Connected

We are dedicated to keeping our members connected! If you want to stay in touch in between monthly meetings, consider joining the weekly socials! To join our Wednesday Members Social Zoom Time, let us know at kingston@rasc.ca. As always, we are looking for volunteers to run this weekly event. The current meetings are as follows (missing Wednesdays on this calendar are for regular centre meetings):

Jan 18, 2023 07:00 PM
Jan 25, 2023 07:00 PM

Feb 1, 2023 07:00 PM
Feb 15, 2023 07:00 PM
Feb 22, 2023 07:00 PM

Mar 1, 2023 07:00 PM
Mar 15, 2023 07:00 PM
Mar 22, 2023 07:00 PM
Mar 29, 2023 07:00 PM

Apr 5, 2023 07:00 PM
Apr 19, 2023 07:00 PM
Apr 26, 2023 07:00 PM

May 3, 2023 07:00 PM
May 17, 2023 07:00 PM
May 24, 2023 07:00 PM
May 31, 2023 07:00 PM

Jun 7, 2023 07:00 PM
Jun 21, 2023 07:00 PM
Jun 28, 2023 07:00 PM

Donate!

If you have not donated yet and wish to get in before the end of the tax year, the club has set up e-transfer through the club email kingston@rasc.ca

Please specify how you would like your donation applied if you indeed have a preference. General funds support meetings (guest speaker honorariums, room rent, Zoom etc), outreach (skynews copies and other handouts, Science Fair prizes), the Library and general running of the club (postage, website fees, bank fees etc.)

The Observatory donations go to future permanent site acquisition and building, and more current needs of equipment maintenance and parts purchases.

RASC Kingston Meeting Minutes

Wednesday, December 14, 2022

Starting at 7 p.m., Kim Hay, President, welcomed all guests and members to our Kingston Centre regular monthly meeting with 24 registered guests.

We began by acknowledging that Queen's University, our January meeting location, is situated on the traditional territory of the Haudenosaunee and Anishinaabek.

General announcements were next. To join the centre's Wednesday Members Social Zoom Time, let us know at kingston@rasc.ca We are looking for volunteers to run this weekly event.

Queen's Observatory Open House is Dec. 17 at 7p.m. Our Dobsonian telescope and eyepieces will be on site for our use.

The next Centre meeting (January 11, 2023) will be hybrid, live at Queen's University Ellis Hall, Room 226, and on Zoom. Our speaker will be Scott Young, "Dome@Home: Astronomy Talk Shows for the Virtual Astronomy Community."

Next up was poetry by David Levy: While attending Queen's, David began his appreciation of the relationship between the night sky and poetry. Tonight, David read from Robert Frost, A Road not Taken.

John Hurley: Leo Enright's Telescope. Our Centre has Leo's old C14 and will be eventually housed in a dome on the Hurley property. Photos were shared of the clean up and assembly of the Astro Haven dome picked up from Kim and Kevin's.

RASC Kingston Meeting Minutes (continued)

The dome works well but the scope is not in usable condition. A rail will be mounted to the C14, and hopefully, will be operational soon.

Bruce Elliott: update on outreach. Science Fair March 30 and 31st in person. Also considering some hybrid sessions to accommodate youth from towns north of Kingston. Science Rendezvous scheduled for May 13, 2023 - in person event with some podcasts available for out-of-town participants. If anyone would like to try something new, Bruce will help facilitate. Please pass on any suggestions or concerns, please contact Linda directly or Bruce.

Kevin Kell: updates on the annual 2022 Member Image Gallery where members submit best imagery of the year. A single image, why you feel it is the best and a note on technical details. Twelve submissions last year and hoping for more this year. Submission deadline is end of December and can be submitted to kevin@starlightcascade.ca or kingston@rasc.ca.

"Science with the RASC Remote Telescope". Our guest speaker was Rick Wagner, a Kingston and Ottawa Centre member and Science Team Lead of the RASC Remote Telescope, a 0.4m RCOS RC Cassegrainian telescope with STX-16803 camera, a filter wheel with LRGB H-alpha OIII and SII filters and an adaptive optics system for higher speed guiding. It also has an Astro-modified Canon 60 full-framed DSLR with a 200mm F2.8 lens on scope. Located at Sierra Remote Observatories, Rick took us on a virtual tour and shared photos. Every quarter, observing teams will share scientific results in the Bulletin and by spring, the Science Team should be up and running and ready to discuss submissions and proposals from the public. Some of the project ideas to encourage interest in scope are: 1) Astrometry, trans-Neptunian objects, comets, minor planets, near-earth objects; 2) Searches of minor planets, supernovae, supernova light echoes, dwarf galaxies/star streams; and 3) Photometry of minor planets and trans Newtonian objects, variable stars, clusters with HR diagrams, variable star searches, extragalactic variables and exoplanet transits. Interesting science captured to date: M61 supernova, M31 V619, HADS light curves, and cataclysmic variable light curves.

Rick Wagner then presented Sky Events for December:
16 Dec – Last Quarter Moon

21 Dec – Mercury (mag -0.6) at greatest elongation east low in the SW shortly after sunset; 5.7 degrees (about one binocular field) up and left from much bright Venus

21 Dec – Winter solstice (16:48EST) – Sun is at its furthest south and begins moving northwards

22 Dec – Ursid meteor shower peaks best seen in predawn hours

23 Dec – New Moon

28-29 Dec – Venus mag 3.9, 1.5 degrees from Mercury low in southwest shortly after sunset

30 Dec – First Quarter Moon

Sky Events – Early January

03 Jan – Quadrantids meteor shower peaks, one of the best of the year

04 Jan – Earth at perihelion (147 098 925km)

06 Jan – Full Moon (18:08EST)

Small Bodies – no asteroid occultations of note

Comet – C/2022 E3 (ZTF) in the morning sky

Members' Observing Events:

John H. shared a photo of the sun with his new lens and camera, bright meteor on drive home. Mark K. shared an image of Neptune live and an image of M77. Malcolm P. shared images of Geminids. Susan G. visual observing of Geminids.

Brian M. photographing Geminids. Bruce E. Dec. 8th clear, cold night of Mars opposition and was out taking images. Fred B. enjoying the clear nights and visual observing. Peggy H. building observatory with John and will try new camera lens soon. Gerald N. enjoying Mars, Jupiter and Orion on clear nights. Hans B. enjoying wildlife.

Keith N. visually observing with poor seeing, day and night and will keep trying. Mark D. imaging Mars with variable weather. Mike H. imaging Fireworks galaxy. Rose-Marie B. taking images of Geminids. Richard W. shared screen and walked through CCD Comander used to image throughout the night.

Kevin K. shared screen of Geminid fireball, Jupiter, and all sky camera images and videos. Kim H. shared image of Sun in white light, 10 min after flare.

Meeting ended at 9:10 p.m. with Kim thanking all. Next meeting, a hybrid event, will be January 11, 2023 at Queen's University Ellis Hall in Rm 226 and also via Zoom. Have a safe and happy holiday season. See you in 2023!

Minutes captured by Elena Zanetti.

The Sky This Month

Rick Wagner

Any night of the week can offer up a broad range of viewing wonders. RASC KC Past President Rick Wagner keeps an eye on the sky, sharing some of the best views each month.

03 Jan – Quadrantids meteor shower peaks about 10PM, very strong (~100 meteors per hour) shower but badly affected by a nearly full Moon.

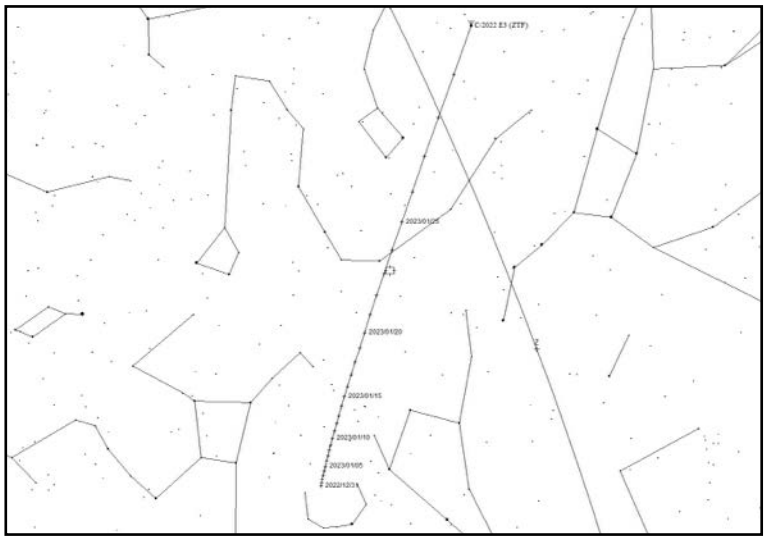
04 Jan – Earth at perihelion – closest point to the Sun at 147 098 925 km

06 Jan – Full Moon (18:08EST)

08 Jan – minor planet 2 Pallas at opposition (mag 7.7)

12 Jan – Mars is stationary and resumes its eastward motion through the constellation Taurus

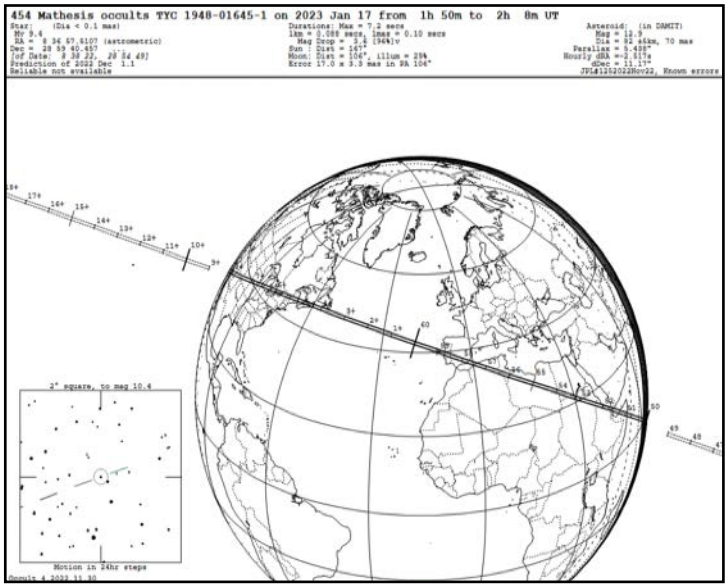
12 Jan – Comet C/2022 E3 (ZTF) reaches perihelion (closest point to Sun); watch over the next two weeks as it brightens and accelerates through northeastern Bootes towards Polaris. Will it reach naked eye brightness by month's end? Watch to find out!



Projected path of Comet C/2022 E3 (ZTF) through January 2023.

15 Jan – Last Quarter Moon

17 Jan – minor planet 454 Mathesis (mag 12.9) occults a mag 9.4 star in northern Cancer, ~21:05EST. Maximum possible duration 7.2s, magnitude drop 3.6.



Minor planet 454 Mathesis will offer local viewers an opportunity to observe it this month.

21 Jan – New Moon (15:53EST)

22 Jan – Venus (mag -3.9) 1/3 degree left of Saturn (mag 0.8) low in the southwest shortly after sunset. Look for a very thin crescent Moon 9° below the pair.

26 Jan – minor planet 6 Hebe at opposition (mag 8.8)

28 Jan – First Quarter Moon

28 Jan – Lunar X visible near crater Werner this evening

29 Jan – Lunar Straight Wall (Rupes Recta) visible this evening

31 Jan – Mars is only 1/5 degree from the limb of the Moon about 1AM.

More on Mars

‘Good Night Oppy’ - Review by Kevin Kell

Amazon Studios. ‘Good Night Oppy’. 2022. 1h 44m
Image credit: Imdb

The recently released Amazon Studios documentary ‘Good Night Oppy’ follows the design, launch, and operations of a robot named Opportunity, the Mars Exploration Rover (MER) affectionately dubbed ‘Oppy’ by her creators and scientists at NASA.

‘Oppy’ was originally expected to live on Mars for only 90 days, but she ultimately explored the red planet for nearly 15 years.

For anyone with the remotest interest in Mars, or planetary spacecraft, you will find this film to be engaging, fascinating and in the end, tear jerking. Within it, there is lots of hardware imagery from the very beginning of the design phase, through construction and into final assembly. There were many many interviews with people of interest, including The rover Drivers, flight engineers, science team members and the Principal Investigator, Steve Squyres. Some might remember him being here in Kingston in 2007 to deliver the Helen Sawyer Hogg lecture at the Royal Military College of Canada.

An emotionally engaging film overall, I will leave you with Oppy's last words:

“My battery is low and it’s getting dark.”

Did you know? The MER project was one of the first to offer the public a chance to send their names to another planet. Both Spirit and Opportunity carried DVDs containing the names of 4 million Mars Enthusiasts (including the editor of this newsletter!), which to this day remain in Gusev Crater and the Meridiani planum as a testament to the public’s continued passion for the exploration of Mars. For more info see: https://www.planetary.org/outreach/red-rover-goes-to-mars-spacecraft-dvd

NASA Ends the Mars Insight Mission

Insight’s two-year mission to study the deep interior of Mars finally came to end this past December nearly four years after it started.

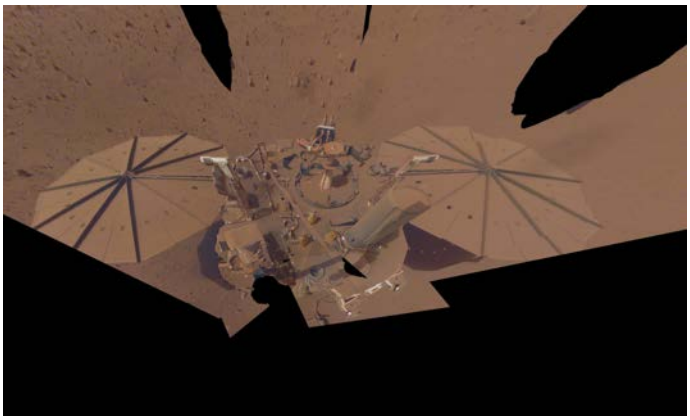
InSight launched from Vandenberg Air Force Base in California on May 5, 2018, and touched down on the western edge of Elysium Planitia, Mars, on November 26. It was the eigthth sucessful US landing on Mars, a planet that historically has been very unkind to Earth’s attempts to send spacecraft there. At least a dozen other landers launched by multiple countries and organizations have failed to arrive safely.

Though InSight collected a wide array of information and imagery during its stay, its main effort focused on capturing seismic data, below surface temperatures, and related sub-surface phyiscal properties.

Designed to operate on the Martian surface for 709 Sols (a Martian year plus 40 days) the mission was later extended past its inital end date of November 24, 2020, to continue collecting both weather and seismic data until its ability to function ceased altogether.

InSight’s last communication with Earth was on December 15, 2022. Though NASA/JPL will continue to listen for a signal from the lander just in case, the last two attempts to contact InSight have been unsuccessful, leading the mission team to conclude that its solar-powered batteries have very likely finally run out. Farewell InSight, and thanks!

For more info go to: https://mars.nasa.gov/insight/

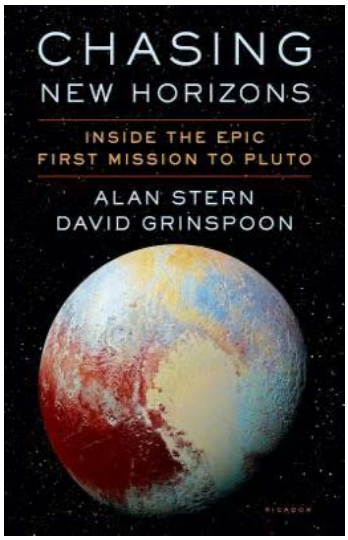


An image of the final selfie taken by NASA's InSight Mars lander on April 24, 2022, the 1,211th Martian day, or sol, of the mission. Photo credit: NASA/JPL.

The Astronomer's Bookshelf

Katia Moskvitch. Neutron Stars: The Quest to Understand the Zombies of the Cosmos. Cambridge: Harvard University Press, 2020. 295pp. ISBN 978-0-674-919935-8.

Science journalist Katia Moskvitch explores the people, technologies, radio telescopes, discoveries, disappointments, and controversies surrounding the topic of netron stars in this fascinating and accessible book. Each of its nine chapters examines a subject in detail, ranging from how neutron stars are formed to how they're studied, to how they may impact other important topics such as dark matter theories. The author begins with an examination of the US Laser Interferometer Gravitational Wave Observatory (LIGO) and its capabilities, and from there takes the reader on a global journey to explore all facets of this illuminating topic. Delivered in plain language without dumbing the subject down, this book offers a good introduction to neutron stars and their impacts for both scholars and enthusiasts.



Alan Stern and David Grinspoon. Chasing New Horizons: Inside the Epic First Mission to Pluto. New York: Picador Books, 2018. 297pp. ISBN 978-1-250-09896-2.

The sheer distance of Pluto from the Earth, as well as the potential cost of getting there, intimidated even the most ambitious administrators at NASA/JPL for years. But this did not deter a dedicated group of scientists and engineers to chasing their dream for nearly 26 years to turn the idea of a mission to faraway Pluto into a reality. This book examines every aspect of the ambitious New Horizons project from its genesis through to its conclusion in fascinating and enjoyable detail. The politics, economics, science and technology behind the planning long range planetary exploration missions are all covered in this work, leaving one with a definite apprecaitaion for the tremendous complexity surrounding the many proposals put forward to NASA/JPL to send spacecraft to explore other worlds.

Member's Photos

Photo Left: Centre member Brian McCracken captured these splendid Geminid meteors on December 13, 2022. Using 10s exposures every 12s for approx. 3.5 hours, he blended these two meteor images captured about 8 minutes apart. Taken with a Nikon Z9 mirrorless camera with Nikon 24-70mm Zoom at 24mm f/2.8.

About Us

The Royal Astronomical Society of Canada

RASC is a national, non-profit, charitable organization devoted to the advancement of astronomy and related sciences. Founded in 1868, The Royal Astronomical Society of Canada is Canada's leading astronomy organization, bringing together over 5000 enthusiastic amateurs, educators, and professionals. In addition to many national services, our 30 Centres offer local programs across Canada.

The Royal Astronomical Society of Canada Kingston Centre (aka Kingston's Astronomy Club)

We are Kingston's Astronomy Club, a local centre of The Royal Astronomical Society of Canada, founded on June 2nd, 1961. We hold monthly meetings, on the 2nd Wednesday of each month (September-June), via zoom videoconferencing and in person, from 7:00-9:00pm Eastern Time.

* We do public outreach programs in the form of helping the Cubs and Guides, teachers, Science Fairs and many public Education and Public Outreach events.

* We help out our members with questions in astronomy and equipment use, and hold private observing sessions, and also with Queen's University Observatory Open House, on the second or third Saturday of each month, at Ellis Hall, Queen's University.

* We support the local Frontenac, Lennox & Addington County Science Fair (FLASF) with a prize in astronomy.

* We are here to answer your questions on astronomy.

JOIN US!
https://kingston.rasc.ca/join

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The Royal Astronomical Society of Canada Kingston Centre provincially incorporated as a Not-For-Profit Corporation in September 2005 and has been a registered Charity with the Canada Revenue Agency since September 2006.

CRA Registration #827905720RR0001

Benefits of Membership to the RASC Kingston Centre

RASC Central based benefits:

* Annual edition of the Observers Handbook
* Bi-monthly RASC Journal (digital)
* Monthly Bulletin of the RASC (digital)
* 6 issues of Skynews Magazine

Centre provided benefits:

* Monthly Centre Newsletter – Regulus
* Weekly social videoconference chat (members and guests only)
* Monthly videoconference meetings (open to the public)
* Equipment loan program