

Astronomy Day 2022 Talks

10:30 Randy Enkin, President, RASC
Victoria Centre, "Tracking the Moon
for 30 Years"

11:30 Ruobing Dong, Physics &
Astronomy, University of
Victoria, "Observing the Birth of
Planets in the Universe"

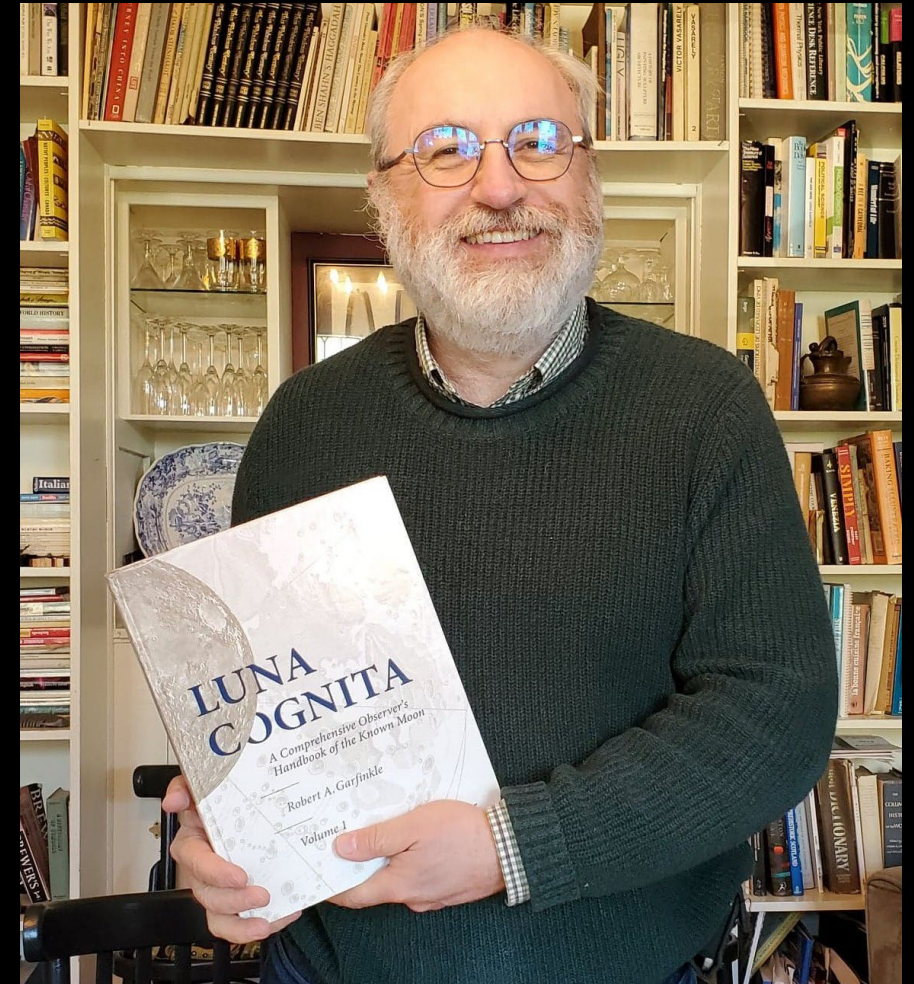
12:30 Mallory Thorp, Physics
& Astronomy, University of
Victoria, "Cosmic Collisions
and the Fate of the Milky
Way"

13:30 Karun
Thanjavur, Physics &
Astronomy, University of
Victoria, "Demystifying
Machine Learning and Neural
Networks"

10:30 Tracking the Moon for 30 Years

Throughout time and in every reach of the Earth, people have observed the Moon. There is much that can be understood about the moon without the use of any specialized equipment. Ever since 1990, I have been noting the phase of the moon in my pocket book every time I see it. It is a simple observation, but has led to fascinating analysis and interpretations. It has also led me to look at how the moon is appreciated by scientists and artists around the world, resulting in "Enkin's Daily Moon" on Facebook and Instagram.

Bio: Randy Enkin is a research scientist at the Geological Survey of Canada. He has been passionate about studying the moon since Apollo 11 landed in 1969. He is the current president of the Victoria Centre of Royal Astronomical Society of Canada.



11:30 Observing the Birth of Planets in the Universe

It is hard to see a plane cruising at 10 km during daytime, as the plane is tiny and faint on the sky. But, if we can see the contrail tailed behind the plane, we know where the plane is. In addition, by studying the contrail, we learn something about the plane, like where it has been and its speed. Now, astronomers are applying the same technique to study how planets form, by detecting and characterizing the structures baby planets produce in their birth cradles — protoplanetary disks. This is a new field largely driven by discoveries made by some of the largest and most advanced telescopes ever built. I will introduce the current status of the field and highlight some of the latest developments.

Bio: Dr. Dong obtained a PhD in astrophysics from Princeton University in 2013. After that, he moved to UC Berkeley as a NASA Hubble Fellow, and then to University of Arizona as a Bok Fellow. He joined University of Victoria in 2018.



12:30 Cosmic Collisions and the Fate of the Milky Way

Right now the Milky Way galaxy is on a collision course with the Andromeda galaxy, a meeting of worlds which will forever change our home galaxy. And it's not the only one! Many of the galaxies we see in the night sky show some sign of a recent galaxy interaction: gravitational forces turning well behaved disks into warped versions of themselves. These interactions, what astronomers call galaxy mergers, play a key role in galaxy evolution over cosmic time as galaxies cannibalize each other to build up their mass. But how can we study a process which transpires over billions of years? Through a combination of galactic archeology and computer simulations, we can turn back the clock to understand how mergers formed the galaxies we observe today. And maybe turn the clock forward, to see what Andromeda has in store for the Milky Way.

Bio: Mallory Thorp is a physics and astronomy PhD candidate at the University of Victoria. Her research uses large spectroscopic surveys to investigate how interactions between galaxies impact the stars and gas within them. Before moving to Victoria she received her B.S. from the University of Washington, Seattle.



13:30 Demystifying Machine Learning and Neural Networks

Deep Learning algorithms thrive on Big Data, the happy 'problem' we now face of enormous amounts of data available in this digital era. In astronomy, telescopes will soon routinely produce terabytes of data every night. Neural networks are trained on these available large datasets to then perform a variety of human-like tasks, such as real-time decision making, identifying subtle patterns in the data. I will explain in simple terms the construction and working of a neural net, and illustrate these principles with basic models.

Bio: As a research astronomer, these science explorations of the Universe come after a full career as a mechanical engineer, specializing in control systems and robotics. Born and raised in a small town in South India, I completed my education up to a bachelor's degree in engineering there, before moving to Canada to pursue graduate studies first in Robotics, and later in Astrophysics.



Astronomy Day 2022 Participants

Royal BC Museum



University of Victoria



Royal Astronomical Society
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