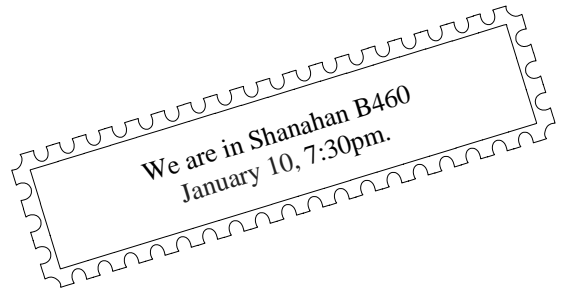




Newsletter of the Pomona Valley Amateur Astronomers

You cannot teach humans anything. You can only help them discover it within themselves.

Galileo



Volume 40 Number 1

nightwatch

January 2020

Just to Get Him off His Phone

Welcome to the 2020s all! As you know this is the time of year when resolutions are made, and I hope too early for them to be broken...

With that in mind, and as we think of ways to not only enjoy our hobby but to encourage others to join our excitement in looking at the night sky and contemplating both the science and the beauty of what we observe – Ludd Trozpek invites us to consider this quote from an article on BBC News by Robin Levinson-King with the revealing title “This dad took his son to Mongolia just to get him off his phone.”

Father Jamie Clarke is an active guy, a skier, trekker, and mountaineer who has scaled Mount Everest twice. After a weekend family trip to a remote (read – no cell or wi-fi reception) his 18-year old son, Khobe, had a miserable time being out of electronic touch with his friends that whole time.

Khobe says being away from his phone was a challenge.

"I think the whole time I was pretty consumed by missing my phone," he says. "You realise how boring everything gets. When I'm bored I can just turn on

YouTube or watch Netflix. What am I going to do, look at the stars and twiddle my thumbs?"

Jamie came up with the rather extreme idea of a Mongolian trek with his son to reinforce the idea that life could be experienced and even enjoyed off the grid. Both enjoyed the experience and have tried to be more in control of their on-line time since returning.

If you'd like to read the whole piece, I realize you'll need to be online to Google the title of the article above, but then you're online now reading the Nightwatch so just stick with it a little longer. After all, the lesson Khobe's father wanted to impart wasn't that technology is all bad just that overindulging can keep us from enjoying and actively participating in the real world – and in fun activities like amateur astronomy!

A lesson to keep in mind as you pen your resolutions for the upcoming year.

Ludd Trozpek and Claire Stover

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Zwicky Book Review

The book *Morphological Astronomy*, published in 1957 and written by Fritz Zwicky, is one I take down from my shelves from time to time, reading a few pages, or a chapter.

It is lucidly written and describes well another day in astronomy when observations were run by hand, analyzed by eye, and usually consisted of tedious transcriptions of numbers or fuzzy photographic plates.

Zwicky was a professor at Caltech and a top-notch astronomer for some five decades. There is a new biography of him out this winter. He is described in one of the reviews linked below that when a young man and upon meeting Robert Millikan, that he told Robert that he had a new idea every two years. Name a subject and I'll give you an idea. Millikan replied "Astrophysics" and so Zwicky became an astrophysicist. Or so the story seems to go...

Zwicky gave the first description of neutron stars when the discovery of the neutron was less than a year old, and was the first, with due respect to latecomers, to infer the presence of dark matter. His "tired light" hypothesis to explain the redshift never did catch on, though he was certainly cognizant of the physics and never posited any extra-physical phenomena in support of his ideas. By 1957, in *Morphological Astronomy*, his discussions seem to me to be wholly in the mainstream.

Zwicky was famously abrasive and difficult to work with. There's a story that he would enter the Athenaeum at Caltech for lunch and challenge any comer to a push-up contest. He, along with Walter Baade I believe, got a lot of time on the 100-inch on Mt. Wilson during the war because, as non-citizens, they could not be involved in the classified war effort. *Morphological Astronomy* gives a thorough and careful analysis of years of painstaking observations. It is pricey on the used book market, but worth it to the astro-nerd.

I'm looking forward to reading the biography of Fritz Zwicky reviewed at these links:

<https://www.thespacereview.com/article/3801/1>

<https://www.sciencefocus.com/space/fritz-zwicky-part-eccentric-part-genius-completely-uncontained/>

Ludd Trozpek

And to show there is often a counterpoint, the following feedback on the biography from a family member, his daughter Barbarina Zwicky:

"This is another lamentable effort due to the glaring biographical omissions and also repetitive parroting of stale anecdotes. My father's memory is not served or honored when a concealed established guard allegedly seeks to navigate his legacy or displaces key actors. It is the historian's responsibility to ensure an inclusive recording. The advancement of bringing the gravitational phenomena of Dark Matter to light would have been unsealed from the echoes of my father's work regardless of the prevailing resistant hierarchical powers, and the scientific establishment's obfuscation and spherical resistance to my father's work that he encountered on a continuum."

Addendum December 2019

"For clarification, I was not contacted by the author of this book and was denied any contribution. Johnson, apparently by design, presents a selective narrative influenced by those who I believe contributed to advance an agenda of self-promotion, rather than an inclusive historical record including their inconvenient truths which upset my father greatly. The omissions are so many and the exclusion so blatant, that the book does not do justice to my father or his memory and denies the interested reader insight into this great scientist, humanitarian, and family man."

Club Events Calendar

Jan 10 General Meeting

Jan 25 Star Party -- TBD

Jan 29 Board Meeting

Feb 7 General Meeting

Feb 22 Star Party -- TBD

Feb 26 Board Meeting

Mar 6 General Meeting

Mar 21 Star Party -- TBD

Apr 1 Board Meeting

Apr 10 General Meeting (presentation: TBD; Apollo 13)

Apr 25 Star Party -- TBD

Apr 29 Board Meeting

May 8 General Meeting

May 23 Star Party -- TBD

May 27 Board Meeting

Jun 5 General Meeting

Jun 20 Star Party -- TBD

Jul 22 Board Meeting

Jul 31 General Meeting

Aug 15 Star Party -- TBD

Aug 19 Board Meeting

Aug 28 General Meeting

Sep 12 Star Party -- TBD

Sep 16 Board Meeting

Sep 25 General Meeting

Oct 10 Star Party -- TBD

Oct 21 Board Meeting

Oct 30 General Meeting

Xmas Dinner Photos



Xmas Dinner Photos



Xmas Dinner Photos



Xmas Dinner Photos



Xmas Dinner Photos



10/13/19 email from Linda Boecker

We, the current Board of RTMC, Inc., have made the difficult decision that 2019 was the last year that the Astronomy Expo will be held. Many contributing factors have led us to this difficult and disappointing decision. We have tried to navigate these challenges while experimenting with many new ideas. However, it has become apparent that hosting further Astronomy Expos is no longer feasible. We are heartened by the fact that both the 50th and 51st years (2018 & 2019) were well received and enjoyed by all those who attended.

We wish to thank all the past Board members and the many volunteers who helped put on this event for 51 amazing years. To the many vendors, who've come to share their products, to the thousands of attendees and to all our various sponsors, thank you for supporting us through the years. Thank you to all the speakers and presenters we've had through the years, for sharing your wonderful knowledge. Thank you to the YMCA Camp Oakes for hosting our event for over 40 years in the beautiful San Bernardino Mountains.

We've made many memories, friends, and discoveries along the way. We will cherish them all.

Again, thank you so much for your support and patronage through the years. We wish you all clear, dark skies and bright futures!

The Board of RTMC, Inc.

NASA Night Sky Notes

January 2020



This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more!

Spot the Young Stars of the Hyades and Pleiades

David Prosper

Orion is the last of a trio of striking star patterns to rise during the late fall and early winter months, preceded by the diminutive Pleiades and larger Hyades in Taurus. All three are easily spotted rising in the east in early January evenings, and are textbook examples of stars in different stages of development.

As discussed in last month's Notes, the famous Orion Nebula (M42), found in Orion's "Sword," is a celestial nursery full of newly-born "baby stars" and still-incubating "protostars," surrounded by the gas from which they were born. Next to Orion we find the Hyades, in Taurus, with their distinctive "V" shape. The Hyades are young but mature stars, hundreds of millions of years old and widely dispersed. Imagine them as "young adult" stars venturing out from their hometown into their new galactic apartments. Bright orange Aldebaran stands out in this group, but is not actually a member; it just happens to be in between us and the Hyades. Traveling from Orion to the Hyades we then find the small, almost dipper-shaped Pleiades star cluster (M45). These are "teenage stars," younger than the Hyades, but older than the newborn stars of the Orion Nebula. These bright young stars are still relatively close together, but have dispersed their birth cocoon of stellar gas, like teenagers venturing around the neighborhood with friends and wearing their own clothes, but still remaining close to home - for now. Astronomers have studied this trio in great detail in order to learn more about stellar evolution.

Figuring the exact distance of the Pleiades from Earth is an interesting problem in astrometry, the study of the exact positions of stars in space. Knowing their exact distance away is a necessary step in determining many other facts about the Pleiades. The European Space Agency's Hipparcos satellite determined their distance to about 392 light years away, around 43 light years closer than previous estimates. However, subsequent measurements by NASA's Hubble Space Telescope indicated a distance of 440 light years, much closer to pre-Hipparcos estimates. Then, using a powerful technique called Very Long Baseline Interferometry (VLBI), which combines the power of radio telescopes from around the world, the distance of the Pleiades was calculated to 443 light years. The ESA's Gaia satellite, a successor to Hipparcos, recently released its first two sets of data, which among other findings show the distance close to the values found by Hubble and VLBI, possibly settling the long-running "Pleiades Controversy" and helping firm up the foundation for follow-up studies about the nature of the stars of the Pleiades.

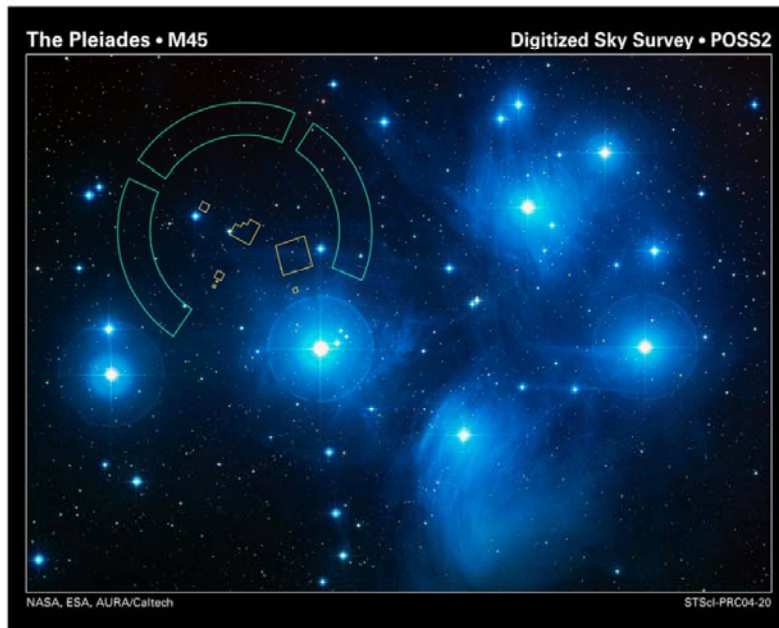
You can learn more about the Pleiades in the Universe Discovery Guide at bit.ly/UDGMarch, and find out about missions helping to measure our universe at nasa.gov.

NASA Night Sky Notes

January 2020



Caption: Locate Orion rising in the east after sunset to find the Orion Nebula in the “Sword,” below the famous “Belt” of three bright stars. Then, look above Orion to find both the Hyades and the Pleiades. Binoculars will bring out lots of extra stars and details in all three objects, but you can even spot them with your unaided eye!



Caption: Close-up of the Pleiades, with the field of view of Hubble's Fine Guidance Sensors overlaid in the top left, which helped refine the distance to the cluster. The circumference of the field of view of these sensors is roughly the size of the full Moon. (Credit: [NASA](#), [ESA](#) and [AURA/Caltech](#))