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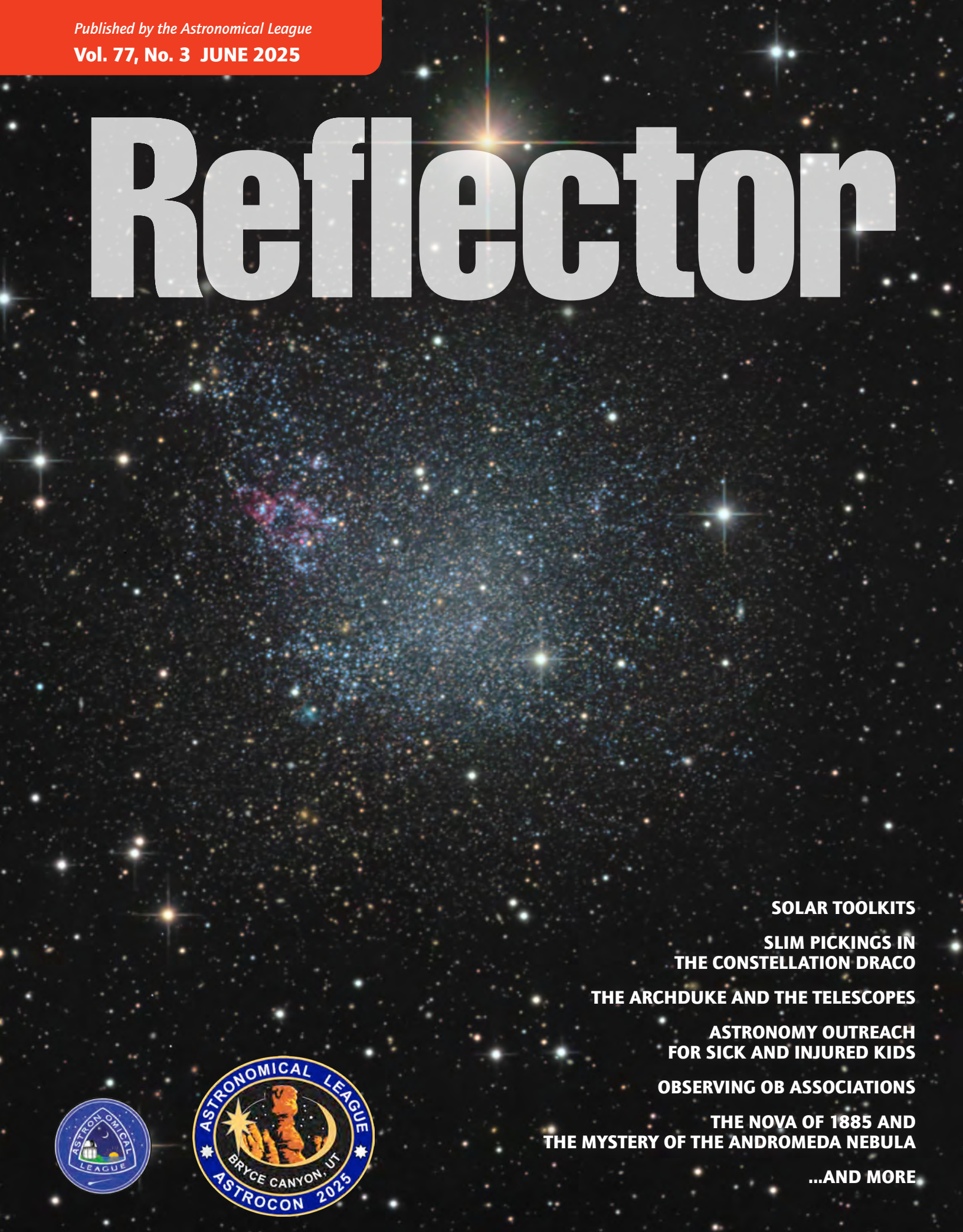
Reflector



SOLAR TOOLKITS

SLIM PICKINGS IN THE CONSTELLATION DRACO

THE ARCHDUKE AND THE TELESCOPES

ASTRONOMY OUTREACH FOR SICK AND INJURED KIDS

OBSERVING OB ASSOCIATIONS

THE NOVA OF 1885 AND THE MYSTERY OF THE ANDROMEDA NEBULA

...AND MORE

Hour meetings, join us for the next one on July 9, 2025, at 5 p.m. Pacific (8 p.m. Eastern). The registration link for this event will be in your June 2025 Member News bulletin. The Social Hour meeting is a great way to connect with us and your fellow amateur astronomers nationwide. Log in to your NSN account to learn more.

—Kat Troche

DarkSky Corner

DarkSky International recently sounded the alarm on a proposed industrial development, the INNA project, in northern Chile, that would threaten world-class astronomical resources. As they note,

> *The site would be located just kilometers from major observatories, including the Very Large Telescope, the Cherenkov Telescope Array, and the Extremely Large Telescope (ELT) – currently under construction and set to become the world's largest optical and near-infrared telescope of its kind. If approved, the INNA project would introduce light pollution, airborne dust, and atmospheric disruption – posing a permanent threat to some of the most important astronomical research on the planet.*

DarkSky International is opposing the project at its current location, and asks concerned individuals to join in the fight. Read the official position statement from the DarkSky board of directors and a news article further detailing the proposed project and DarkSky's concerns at the following links:

Position paper: *darksky.org/app/uploads/2025/03/DarkSky-position-briefing-paper-INNA-3-25-25-English.pdf*

News article: *darksky.org/news/dark-skies-vital-for-astronomy-in-northern-chile-now-at-risk*

—Tim Hunter

Deep-Sky Objects

Slim Pickings in the Constellation Draco

Draco, the Dragon, is the eighth largest constellation in the sky. The constellation wraps around much of Ursa Minor and separates the Big Dipper from the Little Dipper. Draco is circumpolar for most of North America, Europe, and Asia, which means it can be seen throughout the year. Located far from the plane of the Milky Way, Draco has essentially no galactic or globular star clusters within its boundaries. But the constellation contains an abundance of galaxies found on the NGC and IC deep-sky lists.

Despite the plethora of galaxies in Draco, none were bright enough to make Charles Messier's list. The exception is M102, which is controversial in that no one is sure if Messier ever saw or cataloged M102. Some think M102 was a duplicate entry of M101. Last century, M102 was assigned to NGC 5866 in Draco, which provides a target for those engaging in the annual springtime Messier Marathon.

At magnitude 10.7, NGC 5866 is on the west end of a chain of three edge-on spiral galaxies spanning 4 degrees near Draco's border with the constellation Boötes. The middle galaxy in the chain is NGC 5907, shining at magnitude 10.4. Although its integrated magnitude is brighter than NGC 5866, NGC 5907's light is spread out over a much larger area, so it has a lower surface brightness. Here, I want to concentrate on the third and eastern-most spiral in the chain, NGC 5965.

NGC 5965 is an ordinary spiral galaxy viewed nearly edge-on from Earth. The galaxy measures 5.1 by 0.8 arcminutes, quite slim indeed. NGC 5965 shines at magnitude 11.9 and is readily captured in an 8-inch telescope. The galaxy is located 150 million light-years away and has a diameter of 250,000 light-years. William Herschel discovered NGC 5965 on May 5, 1788. The galaxy is two degrees south and one degree east of magnitude 3.29 Iota Draconis.

My image of NGC 5965 was taken with an 8-inch f/8 Ritchey–Chrétien Cassegrain (with a 0.8× focal reducer yielding f/6.4) with a SBIG ST-4000XCM CCD camera using an 80-minute exposure. The bright orange-red (M1) star near the bottom of the image shines at magnitude 8. The galaxy has a bright star-like core in the eyepiece. But as the image herein shows, a prominent dust lane obscures part of the core. The galaxy is slightly tilted from edge-on, so we see more of the north side of the galaxy than the south side. In the image, some of the south edge of the galactic bulge is visible below the dust lane. Below and to the right of NGC 5965 in the image is galaxy NGC 5963, a magnitude 13.1 spiral. Although having a dimmer integrated magnitude, NGC 5963 is much smaller than NGC 5965 and is almost as easy to see in the eyepiece.

The star-like object just to the right of the core of NGC 5965 in the accompanying image is actually a more distant 17th magnitude spiral galaxy. This galaxy is visually beyond the reach of all but the largest amateur telescopes.

I encourage anyone panning for galaxies from a dark site this summer to not only put M102 on the observing list, but the other two edge-on spiral galaxies to the east of it. When you arrive at NGC 5965, you should be treated with a pair of galaxies in the same eyepiece field of view. While they are both in the eyepiece, take the time to observe how a faint, face-on spiral galaxy compares to a faint, edge-on spiral galaxy.

—Dr. James R. Dire

Full STEAM Ahead

BACK TO THE FUTURE

At the MSRAL 2025 Convention at Little Rock, Arkansas, chair Rick Heschmeyer introduced a new program focused on youth engagement and the development of a regional youth network. All youth in clubs or societies or members-at-large were invited to pursue research, planning and executing observing programs, participate in live Zoom sessions, become involved in the annual conventions, and receive assistance to submit forms for national awards. MSRAL's goal is to find a regional youth coordinator who, with the assistance of a committee, will network and mentor students pursuing degrees or careers in astronomy or related science.

The model will be what was in place back in the 1950s to 70s as recorded in *Sky & Telescope* magazine, the League's early *Reflector* and *Bulletin* articles, and Mid-States archives and photos. Students were actively observing, connected nationally via a newsletter, attending and presenting at ALCons, building telescopes, and posting data to the AAVSO database, all with the coordination of Bob Wright and national secretary Wilma Cherup. Ultimately, the goal is to not only get youth organized but provide extra guidance and help for clubs to develop and maintain their youth groups, finding mentors with the help from MSRAL's greatest resources – their astronomy and physics teachers, observing coordinators, and Master Observers.

The first milestone is to secure a regional youth coordinator volunteer who has time and works well with youth and regional leadership. (This person has not been found at the time of writing.) Step two is to have both councils help vet committee members who will be selected to fill specific aspects of the program. The key coordination particulars will focus on connecting with youth members-at-large, plan observing programs, provide resources for outreach, assist in research papers and article writing, help with developing presentations, provide guidance for planning convention activities, generate a newsletter, conduct live Messier Marathons, engage with people who would benefit from accessible astronomy sessions, develop an observatory network, encourage candidates for national awards, develop special interest groups, implement STEAM disciplines connected to astronomy and physics, and gather college student speakers to add to the regional speakers consortium and encourage mentoring of junior and senior high school students.

Currently the specifics are not in place; the committee will develop these after it is assembled. Committee members are currently being recruited and guidelines are being developed and documented for future reference. This is a huge project; because MSRAL's clubs are so active in youth outreach, this just seemed logical to move to the next level for regional engagement.

Hopefully, a full rollout of this youth engagement is scheduled for the 2026 MSRAL Convention where youth will be actively involved in the convention. For more information or volunteering opportunities, please contact MSRAL chair Rick Heschmeyer at *rickheschmeyer@gmail.com.*

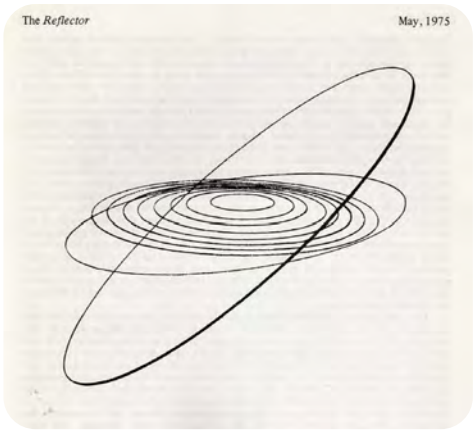
Full STEAM ahead, into the future!

—Peggy Walker

AL History Highlights: Years Ago

25 years ago—May 2010

The League's *Reflector* newsletter made some administrative announcements in the May 2010 issue. Back then we didn't have the monthly "What's Up" on Facebook or social media to keep you up-to-date on League happenings. A small item announced that "League Sales items can now be purchased online." Before then, the *Reflector* was the display medium for League Sales and the transaction was completed by mail or phone. Modern times! A comparison of an archived copy of the website from 2011 at *www.waybackmachine.org* to the current website, *store.astroleague.org*, suggests product offerings have at least tripled in number over the past quarter century. A related ad for the "NEW Member-at-Large" program directed interested individuals to "join online at the new AL Sales website." With this innovation, individuals did not have to belong to a member society to participate in Astronomical League programs and activities. The program has grown phenomenally over the years and now has many international members.


The Reflector May, 1975

50 Years Ago—May 1975

Last time for "50 Years Ago," we featured an article about the then-planet Pluto and the years since its discovery. Here is another about the outer reaches of our Solar System: Planet X. "Does such a planet really exist? In this article, Dr. Ralph Buice discusses evidence pro and con, and offers a new search ephemeris to guide prospective discoverers...." Predicted to be a very massive body with an oddly eccentric orbit of 60 degrees orbiting well beyond Pluto (see insert), it has not been found, even yet. Note that a modern hypothesis for Planet X has been made by Mike Brown. You can Google it (or his book about how he "killed Pluto").

—Denise Moser, AL Historian

To The Editor

Studying the Sun

I found Milena Niemczyk's article "Studying the Sun: A Personal Perspective" very interesting and it brought back many memories. I immediately began to reminisce about my teenage years, so many years ago. In fact, I am 93 years old now. I always enjoy the *Reflector* as a life member of the Central Missouri Astronomical Association (CMAA).*

I feel that Milena and I started solar observing at about the same age. My active years were 1947 to 1949, age 15 to 18. I recorded daily sunspot activity and reported it monthly to Neil J. Heines, Solar Division of the AAVSO. He was my mentor, and I appreciated our personal interactions as I prepared for what I hoped would be an astrophysics career at Harvard University.

My dad helped me with a homemade telescope that was made of the finest 3-inch tin guttering with a 3-inch non-achromatic lens. It had an equatorial mounting atop a fine wooden

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