

Umpqua Community College, Morgan Observatory

Annual Report 2023.

A year of highs and lows

HIGHS--Most of the plans for 2023 were realized.

- Outdoor public events were enhanced with the purchase and use of a new brighter projector.
- A large new awning to shade the outdoor screen for earlier nighttime starts was installed and tested.
- A new dedicated mount was tested and employed for the 100 mm double stacked Lunt Hydrogen Alpha telescope. Long cables were installed to enable mount adjustment from the control center computer.
- The 4" Skywatcher refracting telescope was aligned with the C14 allowing simultaneous imaging with white light filter on the C14 and Lunt Calcium filter on the Skywatcher.
- Public solar viewing sessions were developed and offered during the summer and early fall of 2023 using all three wavelengths.
- Both Astrophysics telescope mounts were realigned to improve object location and tracking. Sky models utilizing more than 140 imaging points were successful over broad east and west parts of the sky.
- Telescopes, mounts, cameras and computers were tested and prepared for the October Annular eclipse. Careful pre-eclipse observations were made to locate the times and positions of the sun for the 3 telescopes to be used for imaging.
- Geneva Academy participated with the observatory to use remote telescopes during the winter off season to show live images and discuss various astronomy topics.
- A new planetary camera was purchased to provide extra capabilities prior to the solar eclipse.
- The C 9.25 was successfully removed and a special attachment to allow X-Y movement of the scope installed. The C9.25 was re-installed on the Astrophysics mount and repositioned to align with the C11 scope. This realignment permits simultaneous imaging of a single target with wide field and close up cameras. This was a project long overdue. (see photo)

More Highs—New stuff not planned from 2022

- Replace 2 small TV monitors. Inside observers have had 4 small TV monitors to observe various images. An opportunity occurred and a new 65" TV monitor was purchased to replace two 28" monitors. The new monitor was mounted and connected to the main computer group with switches. This new large monitor is much brighter and has higher resolution



than the previous smaller monitors. The new large monitor has greatly enhanced visitor viewing even from back seats. (see photo)

- Swap a remote focuser for the C11 with a new ZWO focus system and trade in unused Starizona equipment for another ZWO remote focus system for the C14 at no cost. These focusers work seamlessly with observatory



ZWO cameras for focus changes while operating the camera controls.

- Obtained a gift of a Sky Shed telescope shelter and a TPO 10-inch Carbon Fiber Ritchey Cretien reflecting telescope. Doug travelled back and forth from Roseburg to Salem to retrieve the Sky Shed, scope and more. Doug assembled the telescope shelter on the concrete pad to the east of the observatory and placed the new telescope inside the shelter. (See Photo.)

UCC Astronomy Class Observing

Six observatory nights were planned for UCC students for July and August 2023. Also, two remote telescope live observing sessions were planned during full moon periods. Five of the six on site/online sessions were successful at imaging stars, star clusters, nebula and galaxies. Two remote session using telescopes in



the Canary Islands imaged Solar System targets as well as having a cosmic tour.

Outreach 2023

Seven public observatory nights were planned for the summer/fall observatory season. The 2023 public season started on July 20th with a modest crowd observing several galaxies. The next event was on August 10th with a small crowd attending. Two other nights were offered in late August and early September. Doug hosted 3 daytime solar events with small groups attending. Two Remote Telescope events were offered online with only a few people attending in July and August. A large crowd came for the Annular Solar Eclipse.

Low Points 2023

A series of wildfires sparked by lightning in late August generated large smoke clouds. The September 7th public night had to be cancelled not just because of the smoke in the sky but very poor surface air quality. Clouds obscured the October 13th session and the October 14th morning eclipse was lost in fog and clouds. Doug hosted a crowd of over 300 people hoping to see the foggy eclipse.

THANKS

Many people worked to make it possible to hold 2023 astronomy outreach events . Thanks, and appreciation to all of the donors that have supported the observatory with generous donations. Your contributions have made the purchase for cables and cameras a reality to improve the ability of the observatory to offer new and better tools for outreach and education. Many thanks for Suzi Pritchard and her staff who work tirelessly to support the observatory for all public nights with publicity. Extra special thanks to Doug Pieschel and his many hours of volunteer service and his presentations on public and UCC Class nights.

Plans for 2024

Equipment

- Work will proceed on installing and testing remote focus systems on the C11, C14 and C 9.25 Telescopes.
- Two more ZWO remote focus systems will be purchased and installed on the Skywatcher 4" and the Lunt 100 mm HA scope. This will allow remote focusing all 5 scopes.
- Review and simplify camera cables to the observatory computers, monitors and outdoor projector. Purchase new cables as needed, install and test.
- Prepare a site and install a storage unit to safely store extra astronomy equipment. This will free up more space for visitors inside the observatory.
- Explore replacing older astro camera with newer models. Depends on donor funds available.
- Restore outdoor sky cameras to permit real views of observatory sky conditions as UCC IT can help.
- Work with UCC facilities and electric contractor to link the new Sky Shed Telescope Shelter to the main observatory. Previous donations will pay for this project for early 2024.
- Construct a permanent concrete pier inside the Sky Shed Telescope Shelter. This is a very labor intense project and previously donated funds will provide monies needed.

- Purchase mount adapter and new Celestron high capacity and performance mount. This new mount will have the capacity for telescopes up to C14 size and weight as well as various cameras and filter wheels for photometric data collection. This can only proceed if new funds are donated. The new mount will cost about \$4,000 and a ZWO 6200 Pro camera with a photometric filter set and filter wheel will cost an estimated \$5,500.
- Install TPO 10" scope and align for observational testing. Already gifted scope.
- Test cameras from the observatory for preliminary photometric data collection.

Outreach 2024

- Publicize opportunities for schools to have class-time astronomy using remote telescopes January -March 2024.
- Offer public observing of the partial Solar Eclipse April 8, 2024 at the observatory and online.
- Reach out to schools and groups to do solar observing live from the observatory monthly or more in April and May. Restart this program in September and October 2024.
- Offer 5 public observing nights starting in mid-June and going until late September. Offer two remote telescope events in June and July.
- Prepare to offer students with instructors to do astronomy Citizen Science observing projects with the auxiliary Sky shed observatory by fall 2024 if funding is available and if construction and testing is complete.

As you can see the observatory has ambitious plans for next year. Much is needed to make these plans a reality. Volunteers to help with construction for the new storage shed and connecting the Sky Shed auxiliary dome to the main observatory, building a permanent pier and installing the new mount and scope is needed spring and summer 2024. Donors to provide funds to make the purchase of supplies, equipment and pay for contractors will also help create many new opportunities at the observatory. These plans will add many new features to the observatory and make it a unique astronomy facility among community colleges in Oregon.

Comet Atlas with C11 image.

