

Martz-Kohl Observatory

- The **Marshal Martz Memorial Astronomical Association, Inc.** is an all-volunteer, non-profit 501 (c) 3 organization where your donations are tax-deductible. The Martz-Kohl Observatory is one of the largest publicly owned observatories. It was the dream of the late Professor Marshal Martz, who taught astronomy at Jamestown Community College for more than 20 years.
- Our mission is to inform, educate, and inspire the general public and support teaching in the sciences of astronomy and physics. The emphasis of the **Marshal Martz Memorial Astronomical Association, Inc.** is observed astronomy, well rooted in public education and enjoyment of the starry skies.
- Marshal Martz began construction on the original observatory that housed the 30" telescope in 1954.
- Professor Martz passed away in 1979. In 2001, the Association began to rebuild the original structure that was built by Professor Martz, replacing the 30" telescope with the 24" telescope.
- In 2013, the **Marshal Martz Memorial Astronomical Association, Inc.** received the generous donation of a 20-inch classical Cassegrain reflecting telescope from Dr. Ronald Kohl, DDS, that he had at his home in Lakewood, NY. The 20-inch telescope was built in 14 months by DFM Engineering in Colorado.
- With the financial assistance from the Lenna Foundation, the Association was able to relocate the 20-inch telescope along with the dome that housed it to its current location at the Martz-Kohl Observatory.
- January 2019 was the first opportunity for the community to tour the newly constructed visitor center, control room, and planetarium. The official opening of the new facility was in September 2019.

The Kohl Telescope

- In 2013, Dr. Ronald Kohl, DDS donated a 20-inch classical Cassegrain reflecting telescope. The 20-inch telescope is a research grade telescope and was built by DFM Engineering in Colorado and is a research grade telescope.
- There are 106 of these types of telescopes that are located in observatories and universities throughout the world.
- The telescope sits on a pier that starts down on the hardpan shale about 8 feet under the ground. The pier is isolated from the floor by an air gap so that vibrations from the dome moving or people walking do not interfere with the images in the telescope.
- Dr. Kohl's telescope was located at his home in Lakewood, NY and was originally built in 1991.
- Heat rising up through the slit will cause distortion of the images. The observatory needs to maintain the same temperature as the outside temperature.
- The Big Blue control box next to the telescope is 1990 technology. In 2016, one of the boards in the control box failed – to replace the unit was going to cost \$26,000 plus. The solution was to replace the large control box with the little black box you see on the bottom right-hand corner of the telescope that does everything and more than the 1990's technology did.
- The control box allows the telescope to track near earth satellites, comets, asteroids, and other astronomical objects.
- With the Kohl scope you are able to see objects that are called quasars which are the supermassive black holes that are in the center of a galaxy that is gobbling up immense amounts of gas and dust and stars and creating a tremendous amount of light. That allows it to be seen over billions of light years.
- The farthest object that has been imaged by the Martz Kohl observatory is a quasar that is over 8 billion light years away.

The Kohl Telescope *(continued)*

- The 20-inch Kohl telescope is one of the three largest telescopes in New York that is available for the public to look through.
- The Kohl telescope has a 20-inch diameter mirror that gathers about 20,000 times the amount of light that the human eye sees.
- Remote control means that you can be in a nice warm classroom and control the telescope. It also means that we can control the telescopes off site From the Internet.
- We have taken images with these telescopes for the European Space Agency, for NASA, for the AAVSO (American Association of Variable Star Observers), different astronomical organizations that are utilizing these images and this data to promote better understanding of the solar system and the objects within it.
- We sent 68 photos to the European Space Agency when the Rosetta Space Craft was going around the comet Churyumov–Gerasimenko when the Rosetta Space Craft landed onto it. When that was happening, they wanted pictures here from Earth to go against what they were seeing as it was orbiting the comet.

Radio Room

- The Radio Room will be used for radio astronomy and amateur radio use.
- For radio astronomy, the computer and hardware will be connected to dish antennas outside the facility which will enable us to detect the radio signatures from planets, stars, the sun and neutral hydrogen in the milk way galaxy, and display them on a computer screen. We will also be able to detect meteors as they enter the atmosphere and burn up.
- For amateur radio, we will be able to talk to other amateur radio operators both locally and around the world, gather telemetry from radio and other satellites in low earth orbit including detailed weather images from the National Oceanic and Atmosphere Administration (NOAA) weather satellites, potentially talk with astronauts aboard the International Space Station (ISS), and observe the propagation of radio signals during meteor showers and Coronal Mass Ejections (CME) events due to the sun's activity.

The Martz Telescope

- The 24-inch telescope weighs 1350 pounds and is made out of ½ inch steel plate.
- The Astronomer's Guild of Jamestown, Inc. had the idea for a 24-inch telescope back in 1934 when they first got together. They never started building the telescope until about 1958.
- The black scope on top of the 24-inch Martz telescope is a 16-inch telescope which we bought from the government. You had to be a non-profit organization so we made a bid of \$475.00 and got the 16-inch telescope. It retails for \$23,000.
- You can take the temperature of the CCD imager down to 50 -60 below zero to get rid of a lot of the "heat noise" in the celestial photographs.
- Thanks to the Lenna Foundation, Hultquist Foundation, and the Chautauqua Region Community Foundation, the 24-inch Martz Telescope is fully robotic. The system will allow scheduling of astro photos by students within the schools and be able to access them via cloud-based internet storage.