

THE HYPOXIC OBSERVER[®]

March 2010

Our story begins in a small country in Europe; Estonia. At the time, Estonia was part of the Russian Empire. Born to a family which spoke German, Bernhard was a curious youth who constantly experimented with electricity, and optics. He built an electric dynamo which produced electricity when turned by hand. He purchased a small lens and added the bellows of an accordion to build a camera.

While attending college in Saxony, he took up the practice of grinding telescope mirrors. At first his mirrors were built just for friends. But within three years, he was selling his mirrors to amateur astronomers and was gaining something of a reputation for outstanding quality. This activity soon raised the attention of several professional observatories in Germany, who asked him to make mirrors for them. He was also asked to retouch and improve lens which had been made by famous opticians. His skills were admired and his business grew until World War I. Because he had been born in Estonia, he was considered an enemy-alien, and was arrested. His business never recovered after the war.

Needing work and having little or no income, Bernhard sought work at the Hamburg Observatory. Here he repaired and maintained the horizontal solar telescope which he had built before the war. As part of the observatory staff he went to the Philippines to observe a solar eclipse. It was on this trip that he revealed his most recent invention to Walter Baade, a fellow astronomer. The instrument would change astronomy forever. His first instrument was constructed in 1930, and despite the excitement that it generated in the astronomical circles, the Depression soon followed and he never received any orders for them. He died in 1935, never getting a glimpse of the impact his invention would make on astronomy.

Last month we described how the secondary mirror of an SCT or classic Cassegrain telescope was tested. We found that it required the maker to use another mirror (spherical) just as large as the primary mirror. This second test mirror was deeper and "faster" than the primary of the SCT/Cass by a factor of two. That extra effort to build the test mirror does not need to sit on a shelf and collect dust waiting for its maker to design and build another Cassegrain telescope. It may become a useful astronomical instrument unique unto itself. Have you figured out what that instrument is?

Bernhard's last name was Schmidt. His invention of the Schmidt corrector lens made it possible for large areas of the sky to be photographed and analysed. The corrector combined with a fast spherical primary mirror makes what is called a Schmidt camera (he called it a "Schmidtspiegel"). Oh, did you know that he did all of this grinding of mirrors and lens while missing his right hand? He lost it while experimenting with gunpowder when he was fifteen.

Many observatories use the Schmidt telescope to conduct sky surveys. With a field width as large as 15 degrees, it makes such surveys much easier to complete. The upper limit of a Schmidt corrector lens is about 48 inches in diameter. Like many refractors, this is becoming too small to acquire some of the dimmer objects which are of interest to observatories today. Fortunately, the invention of the CCD has postponed the scrapping of these marvelous telescopes.

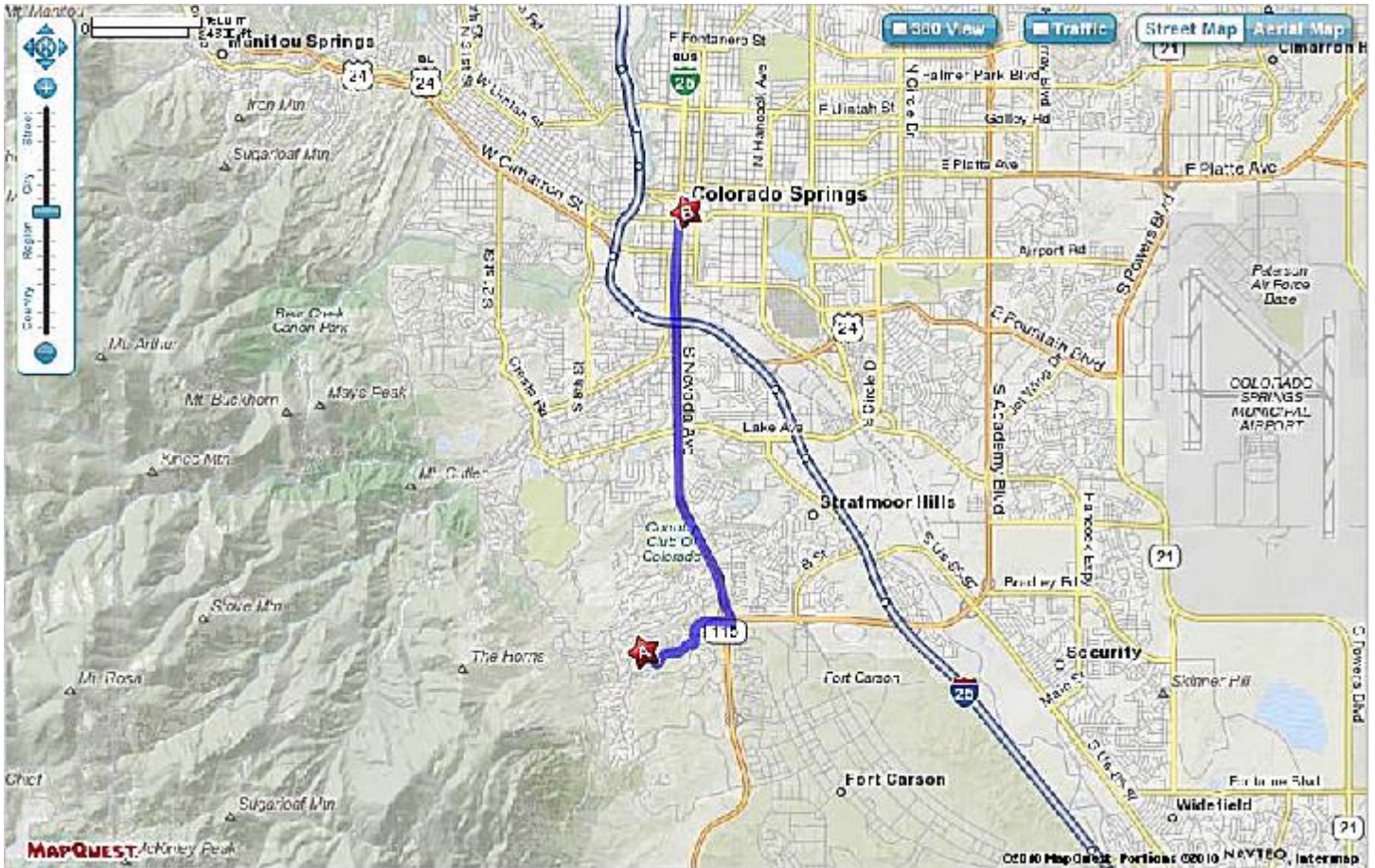
March is Messier Marathon month -

Here are some web pages which may help you find all of the M-objects:

<http://www.davidpaulgreen.com/tumol.html>

http://seds.org/messier/xtra/similar/mm_plus.html

March's Meeting location



This month's meeting will be held in Firehouse #16 located at 4980 Farthing Drive, Oak Meadow Park, Broadmore Bluffs. This is the first time that we will be meeting here, so plan to leave home a bit earlier than usual to make finding it less stressful.

Member Photos *-

M42 - Orion Nebula

Orion is heading westward; as Venus and Mercury begin to ascend just after sunset.



Camera: Canon 20D

Telescope: 12in F/10 SCT Meade (prime focus)

Location: Pikes Peak Community College Rampart campus observatory

Date: 5 March 2010

Exposure: 30sec X 2 + 3 darks **ISO:** 3200

By: F.Glick and D.Anderson

Processing: DeepSkyStacker, GIMP, 602

* Submit your photos and articles on the club website, csastro.org. Submissions made at least one week prior to the monthly meeting will usually be included in the current month's Hypoxic Observer.

Upcoming events for late March and early April:

Tuesday, March 23 7:00pm [Monthly Meeting](#)

Friday, March 26 7:30pm [Public Star Party \(Bear Creek\)](#)

Wednesday, April 14 7:00pm [Space Foundation Symposium Star Party](#)

Monday, April 19 - Sunday, April 25 [National Week of Astronomy](#)



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