11 JUNE 1989
SUNDAY AFTERNOON

HAD PAPERS

Session 1: The History of Astronomy at Michigan
Oral Session, 2:00–5:00 pm
Detroit Observatory

1.01
The Founding of the Detroit Observatory, 1853 – 1863
Margaret Steeneck (U. Mich)

1.02
Astronomy at Michigan in the Late 19th Century
Nicholas Steeneck (U. Mich)

1.03
Astronomy at Michigan in the Early 20th Century
Rudi Lindner (U. Mich)

1.04
Robert Reynolds McMath as an Amateur Astronomer – An Assessment
T. R. WILLIAMS (AAVSO)
This paper examines Robert McMath's early astronomical career and contributions as an amateur astronomer. McMath first emerged as a substantial contributor to astronomy in 1932, when he presented motion pictures of sunrise and sunset at craters on the moon to the National Academy of Sciences. He further developed time-lapse photography to record solar prominences in white light, and then extended the technique to photography in the light of isolated spectral lines with his spectroheliokinematograph. Using this device, McMath and his associates at the McMath–Hulbert Observatory made a series of important discoveries about the motions and physics of solar prominences.

McMath had a number of contemporaries among amateur astronomers who were interested in observing the sun, for example, Gustavus Wynne Cook, Harry B. Rumill, and William W. Kearns. In contrast to these dedicated amateurs, McMath consistently contributed to and worked at the leading edge of observational technique. His engineering background facilitated his understanding of the astronomical problems of interest and the relevance of his particular technological innovations. By collaborating with professional astronomers who had similar interests, McMath was able to make a very substantial contribution to astronomy as an amateur.

1.05
The 1953 Michigan Summer Symposium in Astrophysics
Owen Gingerich (Harvard-Smithsonian CFA)
Beginning in 1927, the University of Michigan summer school in physics became famous as the international place for learning about the latest advances in modern physics. Taking the cue from Michigan, Harlow Shapley organized astronomical summer schools at Harvard from 1935 to 1940. When these did not resume after World War II, one of the participants, Leo Goldberg, by then Director of the University of Michigan Observatory, instigated a summer Symposium in Astrophysics in Ann Arbor in 1953. With funds from the University and the fledgling National Science Foundation, he brought in distinguished lecturers and he also provided fellowships for 14 graduate students or young postdocs from across the United States. Walter Baade, who had just announced the revision to the extragalactic distance scale, came armed with scores of glossy prints from Mount Wilson and Palomar plates. An infrequent publisher, he generously shared his latest results on stellar populations, not only in eleven formal lectures but in late night sessions at a local fraternity house that served as the dormitory for many of the participants. George Gamow, another key lecturer, described cosmic time scales, the possible origin of the elements in a primeval fireball, and the problems of nuclear mass 5 and 8. Like a genie, he materialized out of a bottle of ylem in one of his famous slides. E.E. Salpeter, who had recently worked out the triple alpha process, explained how to overcome the mass 5 and 8 gaps to produce carbon. Gerard Kuiper's series of lectures explained his protoplanet theory of the origin of the solar system. And G.K. Batchelor, from Cambridge, England, considered problems of turbulence in stars and nebulae.

Like the earlier Harvard summer schools, the Michigan symposium helped to introduce physicists to astronomers. While it is hard to point to any specific scientific results that could be attributed to the symposium, the acquaintances made there helped link together an entire post-World War II generation of American astronomers. Some of those returning to Ann Arbor for the 1989 AAS meeting will find a strong flavor of nostalgia in the air.