

AMATEUR CONTRIBUTIONS IN THE STUDY OF COMET HALE-BOPP

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My own contribution to observing the comet began many years before the actual discovery. Early in my childhood, my father and I sat on the porch steps together and watched a meteor shower together. As I grew older he taught me about the constellations, stars and the planets. One of my favorite things to do was to watch the Aurora Borealis paint the sky on cold winter evenings. My parents purchased a 4" telescope for me when I was ten years old, and the wonders of the night sky unfolded to my eager eyes. My interest in astronomy continued to grow during my school years and after I returned from my tour of military duty in the US Air Force, I attended college at Youngstown State University, where I was introduced to a local astronomy club, the Mahoning Valley Astronomical Society. I enjoyed the use of their 16" newtonian reflector, beginning my love for deep sky objects, a love that has continued to grow.

I moved to Arizona in 1980, and observed with some Phoenix area clubs for several years, but did not join any of them.

One evening in the course of my job, I met a man who I overheard telling someone that he had a small telescope. When it was my turn to be waited on, I asked him what size telescope he had and he replied that it was a 17.5" Dobsonian Reflector and he invited me to go observing with the club that he belonged to, the North Phoenix Alternative Astronomical Society; alternative in that they had no scheduled meetings, no club officers, no dues, just a group of friends who loved to observe the sky. I said this is for me and was promptly inducted into their group. On one of the clubs observing trips, on the night of July 22nd, 1995 Jim and I were observing globular star clusters in Sagittarius and, while observing M70, I noticed a small faint fuzzy patch off to one side. I called to Jim who was at his automobile looking at the charts, and asked him if he knew of any other objects close by M70. He asked me what I had, and I told him that I was observing a small fuzzy object, so he walked over to take a look he didn't know what it was either, so we checked the atlas's and determined that it was not plotted either in Tirton's Sky Atlas 2000, or Uranometria. Jim turned to me and said, "Tom I think you have a comet". I told him that we would have to observe it for motion and watch it for at least an hour. After we had determined that it had moved, I went to report the discovery, and received confirmation from the Central Bureau for Astronomical Telegrams of the discovery. Over the next few days, I began to hear of amateur position reports, the



first by an Australian amateur named Gordon Garradd, which allowed the Central Bureau to begin to calculate an orbit. By July 26th sufficient observations (57) had been received to allow the Central Bureau to issue a rough orbit on IAU circular #6191. The Comet could now be designated C/1995 01. While the exact period was unknown, it was more than two hundred years and that the comet would enter the inner solar system. Amateur observations continued to pour in, and by August 1st 208 observations had been reported allowing the Central Bureau to announce on IAUC #6194 an orbit that was now only somewhat uncertain, and the comet would have a perihelion date of April 1st, 1997.

Over the next year and a half as the comet made it's trip into the inner solar system I was amazed at the quantity and quality of images that appeared on the internet, the bulk of which were taken by amateur's both with conventional astrophotography and the relatively new medium to amateurs, of CCD imaging. While at the First International Conference on Comet Hale-Bopp held in Tenerife in the Canary Islands, I wandered through the Poster area and was very impressed with the work done at some observatories by amateur's such as the group at the Observatorio Astronómico de Mallorca, their excellent high resolution imaging of the near nuclear region of the Comet was spectacular. The imaging done by advanced amateur's at the Stazione Astronomica Sozzago Observatory in Italy revealed wonderful spiral structure around the comet nucleus. Before perihelion some of the Internet web pages, such as the excellent page maintained by Ron Balke at the Jet Propulsion Laboratory in Pasadena, California was home to nearly 5000 images of comet Hale-Bopp, most of which were taken by amateur astronomer's. Through the advances made in technology, amateurs will continue to be an adjunct to professional astronomers and through this partnership, astronomy and knowledge will continue grow into the new millenium.