

NEW OBSERVING PROGRAMS IN SPAIN

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Abstract

The recent history of amateur astronomy in Spain is described.

I have been a member of the AAVSO since 1978. In those years, as a beginner, I made observations of variable stars with the naked eye or a finder telescope. Later I built a 10-in Newtonian telescope and began observing fainter stars. Naturally my first stars were our dear long-period variables due to the ease of finding them. My observation place was downtown Madrid, which has very poor skies.

The situation changed when I moved to the outskirts of Madrid, exactly 15 kilometers away from the city. I then decided to buy a larger telescope, a Dobsonian, for which I bought a 13-in mirror from Coulter Optical Company. A friend of mine was able to carry it safely from the U.S.A. With this telescope, at my usual observing site, I can observe, on clear nights, stars to magnitude 14.5-15, using a Nagler 9-mm eyepiece (power 165x).

We have participated in many optical alerts for satellite observations such as Exosat, HEAO, IUE, etc., and we are currently observing stars for the HIPPARCOS project.

For the past four or five years, I have been regularly making 3,000-4,500 observations annually. All observed stars were eruptive or cataclysmic variables.

In January, 1990, a friend of mine, Paco Pujol, encouraged me to observe supernovae, and from that date I have regularly observed 70-80 galaxies monthly. Our first supernovae observations were made in February 1989, on supernova 1989B, which appeared in Messier 66 in Leo. We contacted professional astronomers from Instituto Astrofisico de Canarias (IAC) for assistance in collecting information on the galaxies involved in our search, and to obtain confirmation of possible supernovae. Astronomers from Villafranca Satellite Tracking Station (VILSPA) have helped us obtain copies from the Palomar Sky Survey Prints of all the galaxies we observe. They will also provide help, in case of supernova discovery, to communicate it quickly to Dr. Marsden of the IAU Central Bureau for Astronomical Telegrams at the Center for Astrophysics in Cambridge, Massachusetts, USA.

Shortly after its publication, we bought the *Supernova Search Charts and Handbook* by Thompson and Bryan (Cambridge University Press, 1989), containing maps of galaxies for supernova search. This has helped us to increase the number of galaxies we can observe.

The variable star group from the Astronomical Association of Madrid (AAM) consists mainly of six persons. We have added to this group the only two supernovae observers who search for supernovae on a regular basis. We also contacted Robert Evans who very kindly sent us his supernovae manual, which has clarified many aspects of the search for supernova. We maintain regular mail contact with him, and are always grateful for his expert advice.

This September (1990) we plan to attend a meeting of the supernova group formed

by IAC/Barcelona University and Royal Greenwich Observatory astronomers, at which we will show our search plans and we will ask for help and advice. In case we discover a suspected supernova, we expect to contact one of the big telescopes at Roque de los Muchachos to get confirmation.

In 1978, Jose Ripero and Eduardo Cifuentes started the Mira Network (Spanish Network of Variable Star Observers). We now have around 25 members, some of us being completely dedicated to eruptive variables.

We are thinking of involving the most experienced observers in our supernovae search programs. Due to their small number, we don't reduce our own observations but send them to the coordination centers (AAVSO Headquarters, AFOEV, SUNSEARCH, etc.).

Also, for the past eight years, the author has taught astronomy courses at two levels, beginning and advanced. I always try to encourage students to observe variable stars. Paco Pujol, formerly a student of mine, represents perhaps the best fruits of these labors. I hope he will soon discover a supernova, because he deserves it, due to his hard work and his determination to observe more galaxies every day.

During the next "Jornados Astromomicas Nacionales" (national meeting of amateur astronomers) to be held in Murcia in October 1990, we hope to present a paper entitled "Supernovae Search Programs" to encourage new Spanish amateur astronomers to start working on this very exciting task.