

PRELUDES TO THE FOUNDING OF THE AAVSO

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Abstract

Between 1844 and 1911 numerous professional astronomers advocated the cooperation of amateurs in the observation of variable stars, leading finally to the founding of the AAVSO.

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As early as 1844 Argelander made the following appeal to amateurs to contribute observations of variable stars:

"Therefore do I lay these hitherto sorely neglected variables most pressingly on all lovers of the starry heavens. May you become so grateful for the pleasure which has so often rewarded your looking upward, which has constantly been offered you anew, that you will contribute your little mite towards the more exact knowledge of these stars! The observations may seem long and difficult on paper, but are in execution very simple and may be so modified by each one's individuality as to become his own I am thoroughly convinced that whoever carries on these observations for a few weeks will find so much interest therein that he will never cease. I have one request and it is this; that the observations shall be made known each year. Observations buried in a desk are no observations."
 (*Translation from the German by Annie J. Cannon.*)

Nineteen years later Argelander founded the *Astronomische Gesellschaft* in 1863. As its first chairman he particularly advocated its advancement of research on variable stars and stellar photometry.

An appeal similar to Argelander's was made by Sir John Herschel in his *Outlines of Astronomy* in 1849:

"The whole subject of variable stars is a branch of

practical astronomy which has been too little followed up and it is precisely that in which amateurs of science, and especially voyagers at sea, provided only with good eyes, or moderate instruments, might employ their time to excellent advantage. It holds out a sure promise of rich discovery, and is one in which astronomers in established observatories are almost of necessity precluded from taking a part by the nature of the observations required. Catalogues of the comparative brightness of the stars in each constellation have been constructed by Sir Wm. Herschel, with the express object of facilitating these researches."

Likewise the French astronomer, Arago, in his posthumously published *Astronomie Populaire* (1855) wrote,

"I have proposed, as far as lay in my power, to direct the attention of amateurs of astronomy to this class of objects. I have wished to point out to them a very rich mine with which astronomers by profession, distracted by other labours, have not much occupied their attention, but which appears to me to admit of being explored without the use of large instruments, an ordinary telescope sufficing for the purpose for penetrating into regions which are closely connected with some of the grandest and most profound results of modern science How much we should deceive ourselves if we considered the study of the variations of the light of certain stars as a simple object of curiosity."

In Manchester, England, J. Baxendell (1815-1887) also in 1863 advocated an *Association for the Systematic Observation of Variable Stars*. He pointed out that since the sun is suspected of variability and its constitution appears to resemble that of the fixed stars,

"It is not improbable that an extended knowledge of the phenomena of variable stars may ultimately assist us in obtaining a more intimate acquaintance with the constitution and phenomena of the great luminary of our own system."

As encouragement to potential observers, G. Knott (1835-1894) and Baxendell privately published a pamphlet of

instructions for observers, *On the Method of Observing Variable Stars*, which included a supplement on how to compute periods. It also mentioned that the *Hartwell Variable Star Atlas* was in preparation and that the first of five sections should be completed within a year. Hartwell was not the name of an author of an atlas; it was the name of an estate whose owner, an amateur astronomer, Dr. John Lee, had employed Norman Pogson as an assistant from January 1859 until October 1860, when Pogson was called to Madras as Government Astronomer. Stimulated by Argelander, Pogson began the work on the atlas of variable stars at Hartwell. As reported in the Dryer and Turner *History of the Royal Astronomical Society*, the atlas was posthumously published only in 1908. Under the title, *Observations of Thirty-one Variable Stars*, it includes the charts, magnitudes of comparison stars, and Pogson's detailed magnitude estimates of the variable stars. These beautiful historical charts are now largely forgotten.

There is unfortunately no record on how successful the efforts of Knott and Baxendell were in trying to entice observers to found an association of variable star observers.

The *British Astronomical Association* was founded in 1890 with its membership largely recruited from amateurs, and soon it established a variable star section.

While the official founding date of the AAVSO is 1911, Pickering was already encouraging amateurs as early as 1882. Rev. Joel H. Metcalf (1866-1925), an ardent amateur and maker of numerous valuable Harvard photographic telescopes, wrote in an obituary for Pickering in 1919,

"His enthusiasm for original work outside the limits of the profession was so great that he was able to inspire a large number of amateurs to do useful work for the science, notably in the case of the American Association of Variable Star Observers."

Similarly in 1919 Annie J. Cannon wrote,

"He never overlooked the importance of visual work on variable stars, and as early as 1882 he started his appeals for such observations. In this case, as in

others, he pleaded that the plan should not be local or even national, and that observations should be made according to the same system. If this plea had met with cooperation instead of opposition in the eighties, as it has in the last fifteen years, how much greater would our knowledge now be concerning these stars!"

In 1882 Pickering privately published a pamphlet, "Plan for Securing Observations of the Variable Stars." W. W. Payne (1837-1928), the editor of *The Sidereal Messenger*, predecessor of *Popular Astronomy*, reprinted this in part and volunteered to send interested observers copies of the pamphlet, which gave instructions for observers. Pickering in his *Annual Report* for 1882-3 indicated that there had been numerous responses and important results obtained. However, only a few dedicated enthusiasts stayed with the project, mainly those associated with small colleges and the women's colleges. In 1901 Pickering indicated that he would furnish identification charts with magnitude sequences to anyone who might cooperate in the observations of some 70 long period variable stars. By 1905 this program included some 309 stars. Leon Campbell (1881-1951) was, from the time of his appointment at the Harvard College Observatory in 1899, the major contributor and custodian of all submitted observations. In the period covered by Pickering's 1905 annual report, Campbell had made 2394 observations, Miss Cannon 1290, and observers at Harvard's southern station at Arequipa, Peru, 554 on southern variables, a total of 4238 Harvard observations. The outside volunteers in the same interval contributed 1095 observations. Thus the three Harvard professional observers made nearly four times as many observations as the volunteers.

In the August, 1911, issue of *Popular Astronomy* the editor, H. C. Wilson (1858-1940), published a note, "What an Amateur Can Do." At the head of his list was the study of variable stars. William Tyler Olcott (1873-1936), a lawyer and author who for the past year had already been cooperating with Harvard in variable star observations, took up the challenge of organizing amateurs, and already in November, 1911, The American Association of Variable Star Observers was founded. At last Pickering's long hoped-for dream of cooperation by amateurs had come to fruition.

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