Part 1. Mapping the Sky—Variable Objects From Sky Surveys

The Impact of Ground-Based Monitoring by Variable Star Observers *(Abstract)*

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Abstract Observations by variable star observers around the world have been vital in scheduling and executing runs with instruments aboard satellites and large ground-based telescopes. Correlation of multi-wavelength data with optical observations has helped in finding the answers to many astrophysical questions. Some of the significant results that variable star observers helped to obtain are described.

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The HIPPARCOS Mission: a New Era for Variable Star Astronomy *(Abstract)*

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Abstract Initially planned as a pure astrometric mission, HIPPARCOS was optimized to produce the highest achievable photometric accuracy in the Hp broad-band and in the Tycho B_T and V_T bands. A complex calibration process allowed for coping with the rapid change of the optics and for fixing the magnitude scale to better than 0.001 magnitude throughout the mission.

The time series accumulated allowed the classification of all 118,204 program stars as constant, suspect or variable. 2,712 stars were found as periodic, with well defined periods and amplitudes, and 5,544 as non-periodic with a wild range of behaviors. 3,300 variables are new discoveries. The rest of the stars could be demonstrated as constant or microvariable. For the very first time, the distribution of the variability across the HR diagram may be described quantitatively.

The contribution of the AAVSO to the success of the space mission is recalled and the results of the joint HIPPARCOS-AAVSO observations are presented.

Some of the old and new variables require additional observations from the ground, either visual, with photometers, or with CCDs. After Hipparcos, revisions of current observing programs on variable stars seem necessary. Suggestions for a follow-up of HIPPARCOS mission by amateur and professional astronomers are made.