SOFTWARE FOR CCD ASTRONOMICAL OBSERVATIONS IN TV MODE

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At present, CCD cameras in TV mode are widely used for astronomical observations of objects with fast changing characteristics, such as coordinates and brightness. This is caused by their cheapness, simplicity, and convenience in usage. Personal computers with a video tracking device are used for digitization and storage of video images. Standard software meets the requerements of astronomical observations badly and that is the problem. VideoTracking software for the astronomical observations was developed in Nikolaev Astronomical Observatory.

The main possibilities of the VideoTraking are the following:

•time fixation for each frame by using an external synchronizer;

•record of video frames in standard AVI format with time code;

•record of video frames in special V8 format with additional information for the astronomical observations;

•real time data processing including: subtraction of a dark frame, calculation of coordinates and magnitudes of observed objects, determination of object type (star / non star);

•calculation of coordinates and magnitudes of the selected objects;

•real time recording of coordinates.

Additional possibilities of VideoTraking are the following:

•work with several cameras via an external switch;

•setting of video tracking parameters, such as resolution, frame rate, brightness, contrast;

•real time setting of brightness;

•automatic determination of an angular scale and a frame inclination;

•parallel data processing of the whole frame and record of short video trails;

•input and storage of additional information, such as telescope name and coordinates, equatorial coordinates of the frame centre, etc.;

•transfer of selected object coordinates to a control computer for object tracking;

•real time transfer of coordinate and video information via a network.