TV SYSTEM FOR THE SPACECRAFT VENUS-HALLEY

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Photography the nucleus of the Halley's comet is a unique scientific-technical task, which is solved in the present project by the means of modern optics, solid state image areas (CCD) and microprocessor systems. Photometric model of the comet, ballistic conditions of the flight and the requirements of the nucleus and the surrounding space research in detail served as fundament for development of the block scheme of TV System (T.V.S.). The global structural arrangement of the system includes two TV cameras with objectives where F=1200 mm and F=150 mm, each built with two CCD matrices and an electronic system with two microprocessors and several supplementary devices.

The opto-mechanical devices of the T.V.S. utilize high-tech construction materials, and so they prove great contrast capability meet with small weight and size.

The electronic block of the T.V.S. realises automatic recognition of the nucleus and prepares the video information for data transmission to Earth and for the control of the automatically stabilized platform with the scientific instruments. Both tasks are solved by common use of hardware and software means.

Beyond the severe size, weight, energetic and operating requirements the T.V.S. has to prove production the frame of the nucleus in four electromagnetic wave-spectra, in the 0.5-1.05 microns' range, with 5" angle decomposition.