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TAUVEX - THE STORY OF AN ISRAELI SPACE TELESCOPE THAT STAYED ON THE GROUND

Abstract

The Tel Aviv University Ultraviolet Explorer, or TAUVEK was space telescope array conceived by Noah Brosch of Tel Aviv University and designed and constructed in Israel for Tel Aviv University by El-Op Electro-Optical Industries, Ltd., a division of Elbit systems.

It was back in 1988 that the Israel space agency approach the academia for proposals of space related telescopes. acting as Prime Contractor, for the exploration of the ultraviolet (UV) sky. TAUVEK was selected in 1988 by the Israel Space Agency (ISA) as its priority scientific payload. Although originally slated to fly on a national Israeli satellite of the Ofeq series, TAUVEK was shifted in 1991 to fly as part of a Spektr-RG international observatory, a collaboration of many countries with the Soviet Union (Space Research Institute) leading.

Due to repeated delays of the Spektr project, caused by the economic situation in the post-Soviet Russia, ISA decided to shift TAUVEK to a different satellite. In early-2004 ISA signed an agreement with the Indian Space Research Organization (ISRO) to launch TAUVEK on board the Indian technology demonstrator satellite GSAT-4. The launch vehicle slated to be used was the GSLV with a new, cryogenic, upper stage. TAUVEK was a scientific collaboration between Tel Aviv University and the Indian Institute of Astrophysics in Bangalore.

Originally, TAUVEK was scheduled to be launched in 2008, but various delays caused the integration with GSAT-4 to take place only in November 2009 for a launch the following year. ISRO decided in January 2010 to remove TAUVEK from the satellite since the Indian-built cryogenic upper stage for GSLV was deemed under-powered to bring GSAT-4 to a geosynchronous orbit. GSAT-4 was subsequently lost in the 15 April 2010 launch failure of GSLV. On 13 March 2011 TAUVEK was returned to Israel and was stored at the Prime Contractor facility pending an ISA decision about its future. In 2012 ISA decided to terminate the TAUVEK project, against the recommendation of a committee it formed to consider its future that recommended its release for a high-altitude balloon flight.

The paper will describe thoroughly the history of the space telescope, spanning over 24 years – starting in 1988. It was a technological feat – but its fate was to stay on the ground.