

**[☞ST-11] TWO-COLOR CCD PHOTOMETRY
OF THE INTERMEDIATE POLAR 1RXS J180340.0+401214**

Yonggi Kim^{1,2,3,4}, Joh-Na Yoon², Ivan L. Andronov¹, Vitalii V. Breus¹, Tammy A. Smecker-Hane⁴, Lidia L. Chinarova⁵, and Wonyong Han⁶

¹ *Department of High and Applied Mathematics, Odessa National Maritime University, Mechnikov str., 34, Odessa, 65029, Ukraine,* ² *University Observatory, Chungbuk National University, Cheongju 361-763, Korea,* ³ *Institute for Basic Science Research, Chungbuk National University, Cheongju 361-763, Korea,* ⁴ *Department of Physics and Astronomy, 4129 Frederick Reines Hall, University of California, Irvine, CA 92697-4575, USA,* ⁵ *Astronomical Observatory, Odessa National University, Marazlievskaya Str., 1-V, Odessa, 65014, Ukraine,* ⁶ *Korea Astronomy Observatory and Space Science Institute, Daejeon 305-348, Korea*

We present results of two-color VR photometry of the intermediate polar RXS J1803. The data were acquired using the Korean 1-m telescope located at Mt. Lemmon, USA.

Different "high" and "low" luminosity states, similar to other intermediate polars, were discovered. No statistically significant variability of the color index with varying luminosity was detected. The orbital variability was found to be not statistically significant. Spin maxima timings were determined, as well as the photometric ephemeris for the time interval of our observations. The spin period variations, caused by interaction of the accretion structure with the rotating magnetic white dwarf, were also detected. These variations are of complicated character, and their study requires further observations. We determine the color transformation coefficients for our photometric systems, and improve on the secondary photometric standards.

**[☞ST-12] Simultaneous Observations of SiO and H₂O Masers toward
Known Stellar H₂O-only Maser Sources**

Kim, Jaeheon^{1,2,3}, Cho, Se-Hyung^{2,4}, and Kim, Sang-Joon¹

¹*Dept. of Astronomy and Space Science, Kyung Hee University,*

²*Korean VLBI Network, Korea Astronomy and Space Science Institute,*

³*Yonsei Astronomical Observatory, Yonsei University,*

⁴*Dept. of Astronomy and Space Science, Yonsei University*

We present the results of simultaneous observations of SiO $v = 1, 2, J = 1-0$, ²⁹SiO $v = 0, J = 1-0$, and H₂O 6₁₆-5₂₃ maser lines toward 152 known H₂O-only maser sources (the sources which are previously detected only in the 22 GHz H₂O maser emission) using Yonsei and Tamna 21-m radio telescopes of the Korean VLBI Network from 2009 June to 2011 January. Both SiO and H₂O maser emission were detected from 62 sources giving a detection rate of 40.8 %. SiO-only maser emission was detected from 27 sources, while H₂O-only maser was detected from 22 sources. We have identified 19 new detections of SiO maser emission for previous non-detection sources and 51 new detections of SiO maser for previously not observed sources.

Characteristics of all observed sources in the IRAS two-color diagram is investigated including their evolutionary sequence and mutual relations between SiO and H₂O maser emission. These observational results will be useful for statistical study of asymptotic giant branch (AGB) stars and future VLBI observation.