SEARCHING HUBBLE SPACE TELESCOPE ARCHIVES FOR SOLAR SYSTEM OBSERVATIONS AND PLANNED IMPROVEMENTS FOR JAMES WEBB SPACE TELESCOPE.

C. M. Gosmeyer[1], C. Brasseur[1], S. Fleming[1], M. Mutchler[1], [1]Space Telescope Science Intitute (3700 San Martin Dr, Baltimore, MD, 21218, cgosmeyer@stsci.edu)

Introduction: The Mikulski Archive for Space Telescopes (MAST) houses raw and calibrated science products for the Hubble Space Telescope (HST). Unfortunately, the search interface and calibration pipeline has not been optimized for Solar System observations. We present here tips and tools to help Solar System astronomers make the best use of MAST. We include an overview of a prototype search interface for HST's Wide-Field Planetary Camera 2 (WFPC2) moving target observations, which incorporates JPL Horizons keywords such as phase angle and angular diameter, and a pilot program that produced a static archive of WFPC2, Advanced Camera for Surveys (ACS), and Wide Field Camera 3 (WFC3) science products, optimally reprocessed for moving targets. Both the WFPC2 search interface and the static archive are available to the public. In addition, several topic-specific High Level Science Products (HLSPs) are available (see links below); anyone who would like to contribute a moving target HLSP should contact MAST at archive@stsci.edu.

For the James Webb Space Telescope (JWST), on schedule to launch in October 2018, searching capabilities will be improved, based on the prototype WFPC2 search interface. Objects will be archived by their NAIF ids and target names will be standardized. In addition, the JWST calibration pipeline will by default process Solar System observations with moving target optimizations. Readers may be interested in the following links.

Prototype WFPC2 moving targets search interface: https://archive.stsci.edu/prepds/planetpipeline/search.php

Static archive with "optimally" processed WFPC2, WFC3, and ACS Solar System observations up to around 2015: https://archive.stsci.edu/prepds/mt/

High Level Science Products of long-baseline observations of the giant planets: https://archive.stsci.edu/prepds/opal/

High Level Science Products of Jupiter observations during Juno flybys: https://archive.stsci.edu/prepds/wfcj/