

Rocky Worlds DDT Data Challenge Special Session

This 2-hour, hands-on session will introduce participants to the **Rocky Worlds DDT Data Challenge** and provide a practical opportunity to engage directly with the challenge workflow. The session is designed to help participants understand the scientific goals of the challenge, become familiar with the datasets and analysis tools, and submit an entry to the Kaggle leaderboard. By the end of the session, attendees will have experienced the end-to-end workflow (from data products to submission) in a collaborative team setting. Light refreshments and snacks will be provided. Please state your interest to participate in this session using [the following form](#) by June 29th, 2026, 17:00 WEST.

15:00-15:20 – Welcome and Introduction to the Rocky Worlds Data Challenge

Speakers: Néstor Espinoza (STScI, Rocky Worlds DDT CIT Lead), Taylor Bell (STScI, Data Challenge Technical Lead)

Abstract:

This introductory presentation will provide an overview of the Rocky Worlds DDT Program, including its scientific motivation, target sample, and observational strategy. We will then introduce the Rocky Worlds DDT Data Challenge, outlining its goals, datasets, evaluation framework, and key resources available to participants. The session will provide context for the hands-on activities that follow and highlight how the challenge connects to broader scientific questions about rocky exoplanet atmospheres.

15:20-15:30 – Team Formation and Kaggle Setup

Facilitator: Néstor Espinoza

Abstract:

Participants will create Kaggle accounts (if needed) and form teams of 2–5 attendees for the session. Each team will designate one participant as the primary submitter while working collaboratively throughout the remaining activities. This short interactive segment will ensure all participants are set up on the competition platform and ready to engage with the analysis workflow.

15:30–16:00 – Producing Light Curves for GJ 3929 b and LHS 1140 b

Facilitator: Néstor Espinoza

Abstract:

In this hands-on exercise, participants will generate time-series light curves from Rocky Worlds DDT Data Challenge datasets. Using a simplified last-minus-first reduction of the uncalibrated JWST/MIRI data, teams will produce light curves for Eclipse 3 of GJ 3929 b and one eclipse of LHS 1140 b. The exercise will introduce the structure of the datasets and demonstrate a straightforward path from raw observations to science-ready time-series products.

16:00–16:30 – Interactive Light-Curve Fitting

Facilitator: Néstor Espinoza

Abstract:

Participants will analyze the extracted light curves using an interactive notebook designed for eclipse fitting with simplified systematics models. Teams will explore parameter fitting visually and generate posterior samples on-the-fly. This session will provide practical experience with the core inference tools used in the challenge while emphasizing reproducibility and interpretation of results.

16:30–17:00 – Preparing and Submitting Data Products

Facilitator: Néstor Espinoza

Abstract:

In the final session, teams will assemble the outputs of their analyses into the required submission format and upload an entry to the Kaggle leaderboard. Guided by the designated team submitter, participants will complete the end-to-end workflow from data reduction to submission. The goal is for every team to leave with a successful challenge entry and familiarity with the competition platform. Participants who submit during the session will receive a small prize.