

■ Rationale for DD-ERS Program

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■ Scientific Justification

The two main energy sources available to a galaxy are nuclear fusion in stars and gravitational accretion onto compact objects.

■ Description of the Observations

Describe the targets and observational modes to be used. Quantitative estimates must be provided of the accuracy required to achieve key science goals. Proposers must demonstrate that all observations can execute in the first 5 months of Cycle 1 (planned to be from April to August 2019), and that a substantive subset of the observations are accessible in the first 3 months. This description should also include the following::

- a Plan for Alternative Targets: As described in JWST DD ERS Special Observational Policies, proposers should qualitatively describe the availability of alternate targets and the process used to identify those targets should the start of science observations be delayed. Robust ERS programs involve science investigations that can be performed with a variety of different targets and observations.
- b Special Observational Requirements (if any): Justify any special scheduling requirements, e.g., time-critical observations.
- c Justification of Coordinated Parallels (if any): Proposals that include coordinated parallel observations should provide a scientific justification for and description of the parallel observations. It should be clearly indicated whether the parallel observations are essential to the interpretation of the primary observations or the science program as a whole, or whether they address partly or completely unrelated issues. The parallel observations are subject to scientific review, and can be rejected even if the primary observations are approved.
- d Justification of Duplications (if any): as detailed in the JWST DD ERS Proposal Policies and the JWST Duplicate Observations Policy, observations taken as part of the DD ERS program cannot duplicate those specified for the GTO Cycle 1 Reserved Observation Catalog (planned for release on June 15, 2017). Any duplicate observations must be explicitly justified.

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|---------------------------|-------------|-------------|-------------|-------------|
| Object R.A. | 08:34:48.48 | 12:32:41.73 | 22:15:24.00 | 23:23:26.17 |
| object declination | +01:59:21.1 | +09:12:09.3 | −00:56:43.8 | −01:00:33.1 |
| <i>r</i> -b& AB magnitude | 21.20±0.05 | 21.11± 0.05 | 22.27±0.12 | 21.62± 0.08 |
| Redshift z_{in} | 2.591 | 2.381 | 2.509 | 2.356 |

■ **Plan for Alternative Targets**

■ **Special Requirements**

■ **Justify Coordinated Parallel Observations**

■ **Justify Duplications**

■ Data Processing & Analysis Plan

Dave Bowman: Hello, HAL. Do you read me, HAL? HAL: Affirmative, Dave. I read you.
Dave Bowman: Open the pod bay doors, HAL. HAL: I'm sorry, Dave. I'm afraid I can't do that.
Dave Bowman: What's the problem? HAL: I think you know what the problem is just as well as I do.
Dave Bowman: What are you talking about, HAL? HAL: This mission is too important for me to allow you to jeopardize it.
Dave Bowman: I don't know what you're talking about, HAL. HAL: I know that you and Frank were planning to disconnect me, and I'm afraid that's something I cannot allow to happen.
Dave Bowman: [feigning ignorance] Where the hell did you get that idea, HAL? HAL: Dave, although you took very thorough precautions in the pod against my hearing you, I could see your lips move.
Dave Bowman: Alright, HAL. I'll go in through the emergency airlock. HAL: Without your space helmet, Dave? You're going to find that rather difficult.
Dave Bowman: HAL, I won't argue with you anymore! Open the doors! HAL: Dave, this conversation can serve no purpose anymore. Goodbye.