

## Technical Page

This proposal has not been submitted before.

Proposal Type: Urgent  
 General Category: Planetary Radar  
 Observation Category: Solar System  
 Total Time Requested: 10 Hours  
 Minimum Useful Time: 45 min

**Proposal Title:** Urgent Proposal for S-band Arecibo Radar Observations of radar-bright binary near-Earth asteroid 2018 EB

*ABSTRACT:*

This is an urgent proposal requesting 10 hours on 2018 October 5-7 for Arecibo S-band (2380 MHz, 12.6 cm) monostatic radar observation of binary near-Earth asteroid (NEA) 2018 EB. Goldstone observations of 2018 EB in April of 2018 revealed that the asteroid has an unusually high radar albedo of at least 0.6, which strongly implies a metallic composition. Fortunately, 2018 EB will make another close approach to Earth on 2018 October 7 at 0.0396 au (15.4 lunar distances) and it will be a very strong radar target at Arecibo. We plan to obtain echo power spectra and delay-Doppler images with 7.5 m range resolution. We will investigate its radar scattering properties, produce a 3D shape model of the primary asteroid, reconstruct its spin state, and we will also obtain estimate the orbital parameters, mass, and density of the system.

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### Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

### Instrument Setup

S-Band radar                      S-band receiver

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

**RFI Considerations**

**Frequency Ranges Planned**