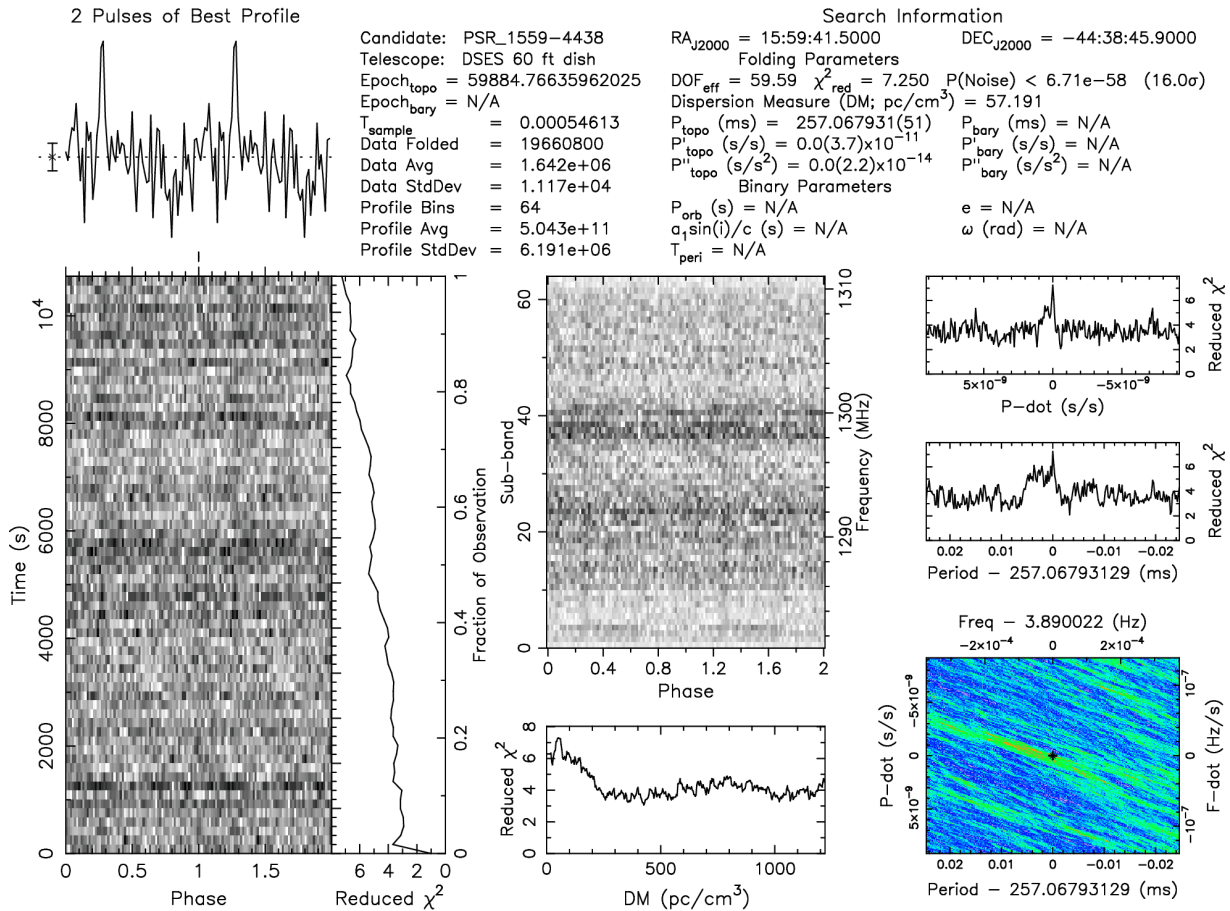


DSES Pulsar Observation Report #23: B1556-44

Observation Parameter	Value
Source Name	B1556-44 (J1559-4438)
Date & Time (UTC)	202201101_182333
Integration Time	10800 secs (180 mins)
Observers	Glenn Davis, Dan Layne
Telescope	Plishner 60 ft. dish (18.3 m). Haswell, CO
Feed horn	1296 Mhz, Single Polarization, Beamwidth = 0.88°
Receiver	USRP B210, Bandwidth = 30 Mhz. RF Gain = 64
Computer	System76, 16 core, Ubuntu 20.04
Planning Tools	Murmur, Stellarium, System 1
Collection Tools	System 1, GnuRadio, PRESTO/TEMPO, RIPTIDE
Flux Density	37 mJy (S1400)
Source RA, DEC (J2000)	15 ^h 59 ^m 41.5 ^s ; -44° 38' 45.9''



Discussion: PRESTO results, based on the ATNF pulsar ephemeris, are shown above. This pulsar was low on the horizon, likely causing additional ionospheric effects. Since PRESTO results are weak, the RIPTIDE time-series algorithm was used to verify the pulsar. Shown below, RIPTIDE shows a faint trace at the same phase angle as PRESTO. Also, RIPTIDE found the peak at the same period as PRESTO (within 1 microsecond). Some RFI is apparent in the PRESTO phase plots, which also inhibits ability to find low S/N pulses. The RFIClean algorithm was used to excise RFI in the data, but it didn't improve the results since RFI removal algorithms tend to smooth the real pulse data along with the noise. Nevertheless, B1556-44 was detected Nov. 1, 2022.

