Title:	AstroSat View of Blazar OJ 287:
Other Titles:	A complete evolutionary cycle of HBL Component from end-phase to disappearance and Re-emergence
Authors:	Kushwaha, Pankaj (/jspui/browse?type=author&value=Kushwaha%2C+Pankaj) Singh, Kulinder Pal (/jspui/browse?type=author&value=Singh%2C+Kulinder+Pal) Sinha, A. (/jspui/browse?type=author&value=Sinha%2C+A.) Pal, Main (/jspui/browse?type=author&value=Pal%2C+Main) C, Gulab (/jspui/browse?type=author&value=C%2C+Gulab) Dewangan (/jspui/browse?type=author&value=Dewangan) Agarwal, A. (/jspui/browse?type=author&value=Agarwal%2C+A.)
Keywords:	AstroSat Blazar OJ 287 evolutionary Component disappearance
Issue Date:	2022
Publisher:	Proceeding of Science
Citation:	Proceedings of Science, 395(1), 45108.
Abstract:	We report three AstroSat observations of BL Lacertae object OJ 287. The three observations caught it in very different flux states that are connected to different broadband spectral states. These observations trace the source spectral evolution from the end-phase of activity driven by a new, additional HBL like emission component in 2017 to its complete disappearance in 2018 and re-emergence in 2020. The 2017 observation shows a comparatively flatter optical-UV and X-ray spectrum. Supplementing it with the simultaneous NuSTAR monitoring indicates a hardening at the high-energy end. The 2018 observation shows a harder X-ray spectrum and a sharp decline or cutoff in the optical-UV spectrum revealed thanks to the Far-UV data from AstroSat. The brightest of all, the 2020 observation shows a hardened optical-UV spectrum and an extremely soft X-ray spectrum, constraining the low-energy peak of spectral energy distribution at UV energies – a characteristic of HBL blazars. The contemporaneous MeV-GeV spectra from LAT show the well-known OJ 287 spectrum during 2018 but a flatter spectrum during 2017 and a hardening above ~1 GeV during 2020. Modeling broadband SEDs show that the 2018 emission spectrum can be reproduced with a one-zone leptonic model while 2017 and 2020 observations need a two-zone model, with the additional zone emitting an HBL radiation.
Description:	Only IISER Mohali authors are available in the record.
URI:	https://doi.org/10.22323/1.395.0644 (https://doi.org/10.22323/1.395.0644) http://hdl.handle.net/123456789/4853 (http://hdl.handle.net/123456789/4853)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

File	Description	Size	Format	
Need To Add…Full Text_PDF..pdf (/jspui/bitstream/123456789/4853/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF..pdf)		15.36 kB	Adobe PDF	View/Open (/jspu

Show full item record (/jspui/handle/123456789/4853?mode=full)

(/jspui/handle/123456789/4853/statistics)