Title:	Spectral States of OJ 287 blazar from Multiwavelength Observations with AstroSat
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Abstract:	We present AstroSat soft X-ray, near-UV (NUV), and far-UV (FUV) observations of a blazar, OJ 287, carried out in 2017, 2018, and 2020. The simultaneous observations with NuSTAR in 2017 provide a broad-band look encompassing NUV, FUV, soft, and hard X-rays. Captured in three different broad-band spectral states in three observations, the X-ray spectrum is found to be the hardest during 2018, while the high-energy-end of the simultaneous optical-FUV spectrum shows a steepening that is modelled with a broken power-law spectrum. The spectral energy distribution (SED) in 2017 shows a relatively flatter optical-FUV and soft X-ray spectra, implying an additional emission component. The 2020 optical-FUV spectrum is harder than in 2017 and 2018, with an extremely soft X-ray spectrum and a hardening above ~1 GeV, similar to the SEDs of High-energy-peaked BL Lac objects (HBL), thereby establishing that this additional emission component has HBL-like properties. The AstroSat multiwavelength observations trace the spectral evolution from the end-phase of the HBL component in 2017 to its disappearance in 2018 followed by its revival in 2020. A single zone leptonic model reproduces the 2018 broad-band spectrum, while the 2017 and 2020 SEDs require an additional HBL-like emitting zone. The spectral evolution of the high-energy-end of optical-UV spectrum, revealed by the FUV observations in 2017 and 2018, strongly suggests that X-ray spectral changes in the normal broad-band spectral state of OJ 287 are primarily due to the evolution of the optical-UV synchrotron spectrum.
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