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Photochemistry, mixing and transport in Jupiter's stratosphere constrained by Cassini

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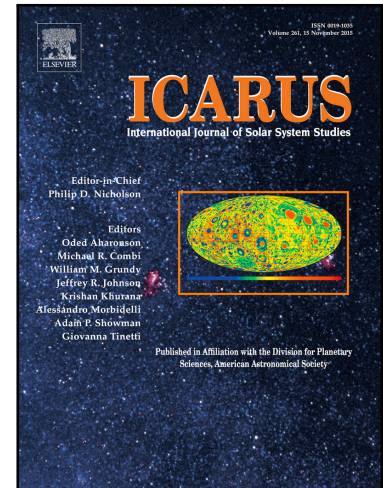
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1 **Highlights**

- 2 • We developed a seasonal 2D-model (altitude-latitude) of Jupiters stratospheric com-
3 position
- 4 • We use previous published constraints to add 2D-diffusive and advective transport to
5 the model to interpret Cassinis observations
- 6 • Adding purely diffusive mixing cannot reproduce the observations
- 7 • Adding advective transport in the form of upwelling at the equator and downwelling
8 at high latitudes improves the fit to the ethane observations but degrades the fit to
9 the acetylene observations
- 10 • The magnitude of the advective transport needed to reproduce the ethane observations
11 is very sensitive to the magnitude of the meridional diffusive mixing

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