



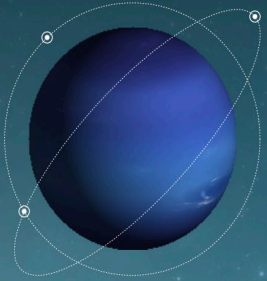
Updates to the Planetary Spectrum Generator (PSG)

PSG is a free and powerful tool, intensively used to synthesize spectra of exoplanets and objects in the solar system (Villanueva et al., 2018 JQSRT 217 86-104)



Planetary Spectrum Generator

Home Help Databases Modeling Remote operation Retrievals Applications About PSG



GJ 1214b

Geometry: GJ 1214b measured via Observatory from 14.6500 pc for date (2020/04/08 01:32 UT)

Change Object

Atmosphere and surface: Surface pressure: 1.0 bar; Molecular weight: 2.36 g/mol; Gases: H₂, He, H₂O, CH₄; Surface temperature: 888.1 K; Albedo: 0.164; Emissivity: 0.836;

Change Composition

Instrument parameters: Measurement range 0.5–17 μ m with a resolution of 200 RP. Molecular signatures included; Continuum/background fluxes enabled;

Change Instrument

Select template

Load template

Reset

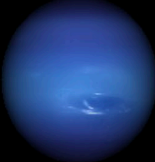
Download configuration

Generate Spectra

Observer's view



From star

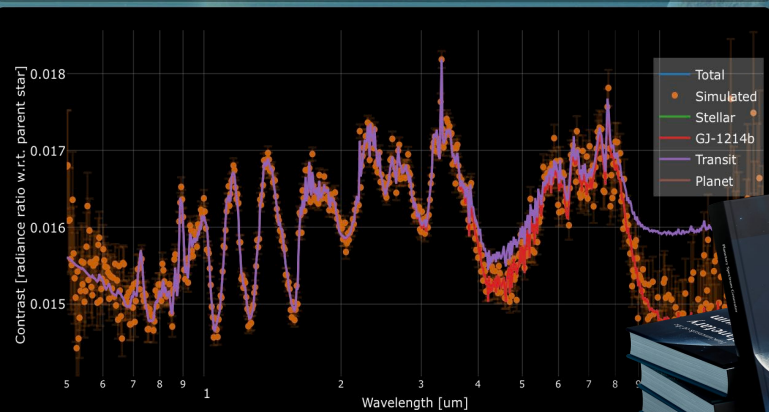


Radiance spectrum Simulation took 1.56 seconds

Layering

B/W

Download



Faggi, Liuzzi, Fauchez, Kofman, Villanueva

- Recently developed features such as online video tutorials and a handbook (ISBN 978-0-578-36143-7, Villanueva et al. 2022) to help users with the public server and the installable suite.
- PSG's website is widely used, reaching up to 1 million hits/month, and has been cited by >120 works.
- Recently updated versatile API, allowing scripting and cluster management of PSG virtual machines on many personal computers.
- PSG was nominated for NASA's "Software of the Year" award in June 2022.
- More than 40 papers published since 2018 and world-wide collaborations.
- PSG is part of an international model inter-comparison team, called CUSINE, with the goal of comparing/benchmarking many different radiative transfer codes across the world. Protocol paper in preparation.