

VOLTR

REAL TIME CLOUD COMPOSITION PROFILES
WITH AN OPTOFLUIDIC INSTRUMENT



IMPOSSIBLE

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20 SECOND SUMMARY

WHAT

- Identify unknown UV absorbers
- Characterize atmospheric constituents
- Assess habitability or detect traces of life

HOW

- Collect cloud aerosols
- Acquire ultrafast (<1s) surface-enhanced Raman (SERS) and laser-induced breakdown (LIBS) spectra
- Interpret spectral data in real time during descent

PATH TO FLIGHT

- **ppb-level** detection of organic functional groups, in real time
- Ultra-low SWaP-C compatible with **SIMPLEX small spacecraft**
- VOLTR subsystems at **TRL5** in 2022 through NASA SBIR, MatISSE, PSTAR, and NASA ARC CIF
- **Pioneer Venus heritage**

NASA SBIR (#80NSSC19C0333; #80NSSC19C0312)
NASA MatISSE and PSTAR (#80NSSC19K0568;
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