50 km 0'

## REAL TIME CLOUD COMPOSITION PROFILES WITH AN OPTOFLUIDIC INSTRUMENT

30 km 5'

10 km

10'

## 20 SECOND SUMMARY

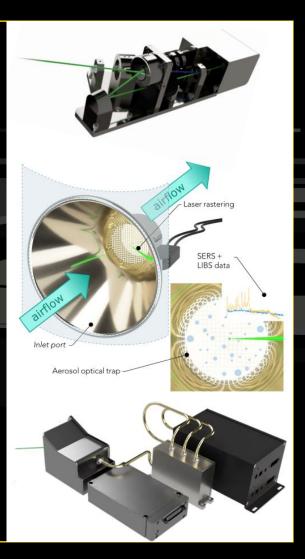
- Identify unknown UV absorbers
- Characterize atmospheric constituents
- Assess habitability or detect traces of ife
- Collect cloud aerosols

- 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; #80NSSC18K1651)



IMPOSSIBLE Simon, Eshelman, Sobron



Brecht, Cassell, Davila, Gentry, Iraci, Mattioda