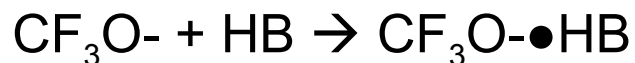


# Caltech Negative Ion CIMS

Ion chemistry is used:



or,



Operating requirements and consumables:

Need LN2 (~10L/day for cryopump)

Need ~1 cylinder Air / flight



**Científicos de la Nasa están pendientes de los datos recabados durante 24 horas, desde nuestro país, con el objetivo de conocer el comportamiento atmosférico y cambio climático.**

*Reference:* Crouse JD, McKinney KA, Kwan AJ, et al., Measurement of gas-phase hydroperoxides by chemical ionization mass spectrometry, *Anal. Chem.*, **78**, 6726, 2006

# Data products expected for ARCTAS

- Single-quad (approximately one 0.5 s sample every 10s):
  - Inorganic Acids -  $\text{HNO}_3$ ,  $\text{HNO}_4$ ,  $\text{HCN}$ ,
  - Organic Acids -  $\text{HC(O)OH}$ ,  $\text{CH}_3\text{C(O)OH}$ ,
  - Hydroperoxides -  $\text{H}_2\text{O}_2$ ,  $\text{CH}_3\text{C(O)OOH}$ ,  $\text{HOCH}_2\text{OOH}$
- Triple-quad:
  - $\text{CH}_3\text{OOH}$ ,  $\text{H}_2\text{O}_2$ ,  $\text{HCN}$
- Sensitivity – 10-50 pptv 0.5 sec. Accuracy, typically  $\pm 30\%$

## Research Products for ARCTAS

- Phase 1.  $\text{HOBr}$ ,  $\text{HBr}$ ,  $\text{HI}$
- Phase 2. High temporal resolution  $\text{HCN}$  during plume sampling (at the expense of  $\text{CH}_3\text{OOH}$  in plume)