# TOGA – NASA: Trace Organic Gas Analyzer

- GC-MS – Based System - ~35 compounds HCs, CFCs, OVOCs, e.g, methanol, acetone, butane, benzene, CFC-113, acetonitrile, etc.
- Chromatographically separated – mass selected
- All species collected simultaneously
- 2.0 – 2.5 min time resolution
- 0.1 pptv – 20 pptv (methanol) detection limit

**Operation Requirements**

- Calibrations, zeros - need minimum of 6 continuous minutes (1 zero, 2 cals) per flight at < 30,000 ft.
- Requirements forwarded to R. Shetter for suitcase flight (LN2, etc.)

# TOGA-ARCTAS full compound list

| Compound | Compound |
|---|---|
| **OVOCs** | |
| Methanol | Propanal |
| Ethanol | Butanal |
| Acetone | Pentanal |
| Butanone | 2-Pentanone |
| Methyl tert. Butyl Ether | 3-Pentanone |
| Acetaldehyde | |
| **NMHCs** | |
| Isoprene | Benzene |
| Propane | Toluene |
| Butane | Ethyl Benzene |
| Isobutane | *m*-Xylene |
| Pentane | *o*-Xylene |
| Isopentane | 1,3,5- Trimethylbenzene |
| 1,3-Butadiene | 1,2,4-Trimethylbenzene |
| **Halocarbons** | |
| Tetrachloroethylene | CFC-113 |
| Tetrachloromethane | Chloromethane |
| Chloroform | Methyl Bromide |
| Methylene Chloride | Methyl Iodide |
| Chloroacetaldehyde | Chloroacetone |
| Bromoacetaldehyde | Bromoacetone |
| **Other** | |
| Dimethyl Sulfide | Acetonitrile |