

General Attributes of Reduced Gravity Diagnostics Systems:

- Compact (typically $< 10^{-2} \text{ m}^3$)
- Minimal power consumption (order of 10^1 watts desirable)
- Mechanically robust (6-7 g launch loads; Factor of 2-3 higher for flight qualification)
- Safe
- Reliable
- Configured for quasi-expert operation \Rightarrow emphasis on user interfaces
- Limitations on data storage and transmission ($\approx 6 \text{ Mbytes/sec}$ @ 40% duty cycle) \Rightarrow desire for on-line data processing
- Comparatively weak nature of reduced-gravity phenomena favor non-intrusive optical diagnostics

