HYPERSPECTRAL IMAGING OF MINE SITES

AVIRIS

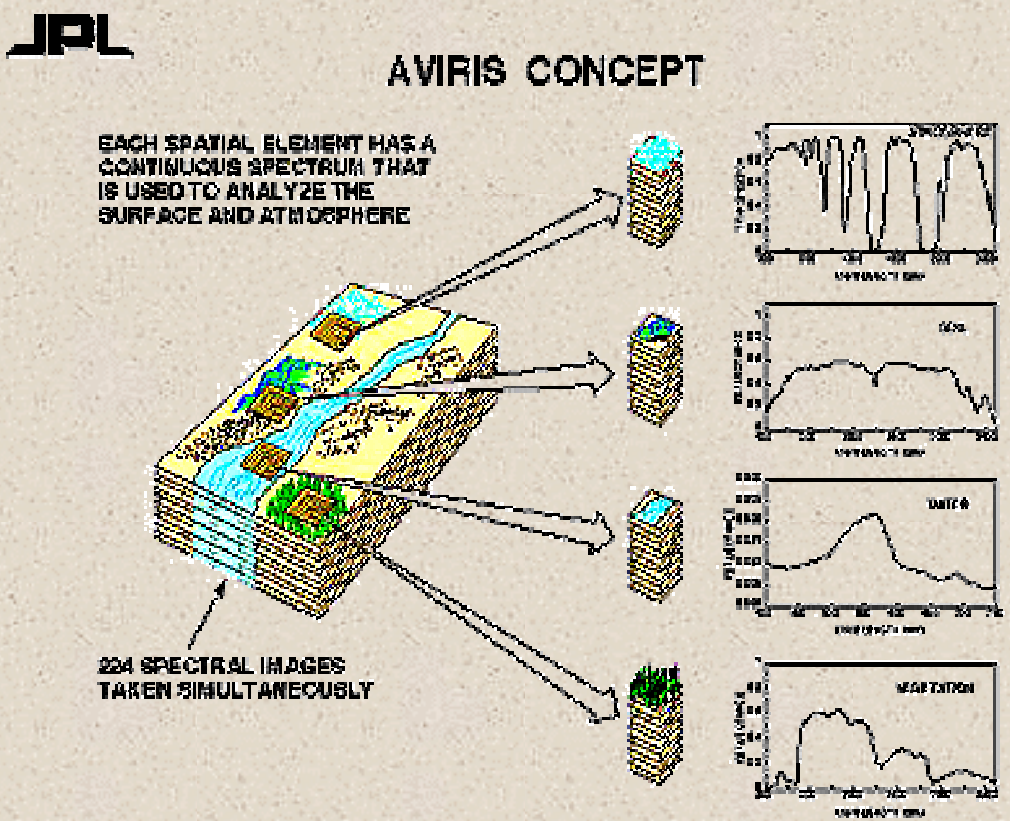
Common uses of Hyperspectral Imagery

- ❑ Identify new mine sites
  - Mapping concentration of key minerals
- ❑ Control of acid mine drainage
  - Mapping zones within the same mineral, but different chemical phases
- ❑ Rehabilitate and restructure old mines
  - Identify old mines to convert them to areas of new
  - economic interest (e.g. mine parks)

AVIRIS

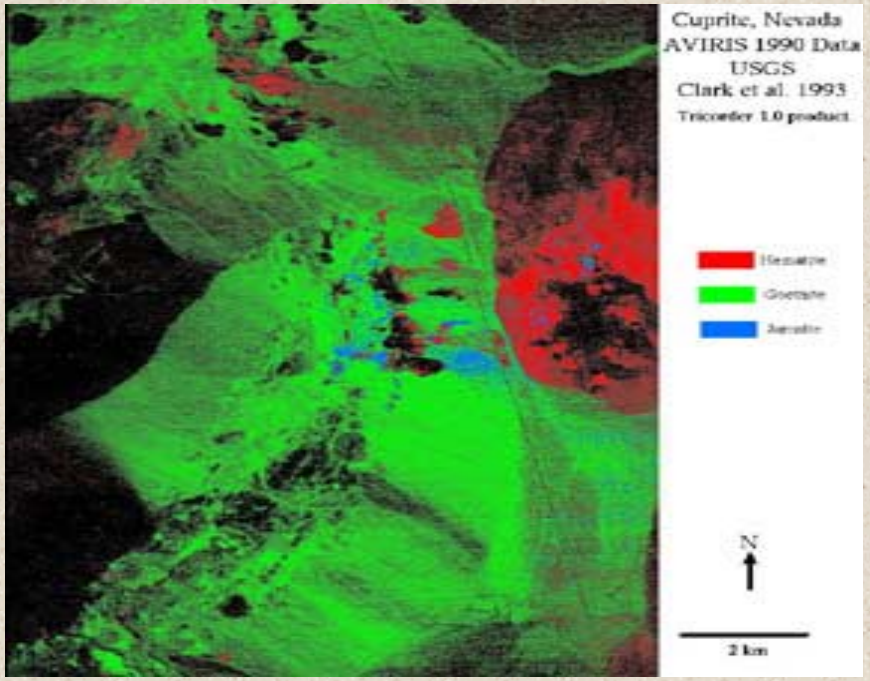
Airborne Visible and Infra-Red Imaging Spectrometer

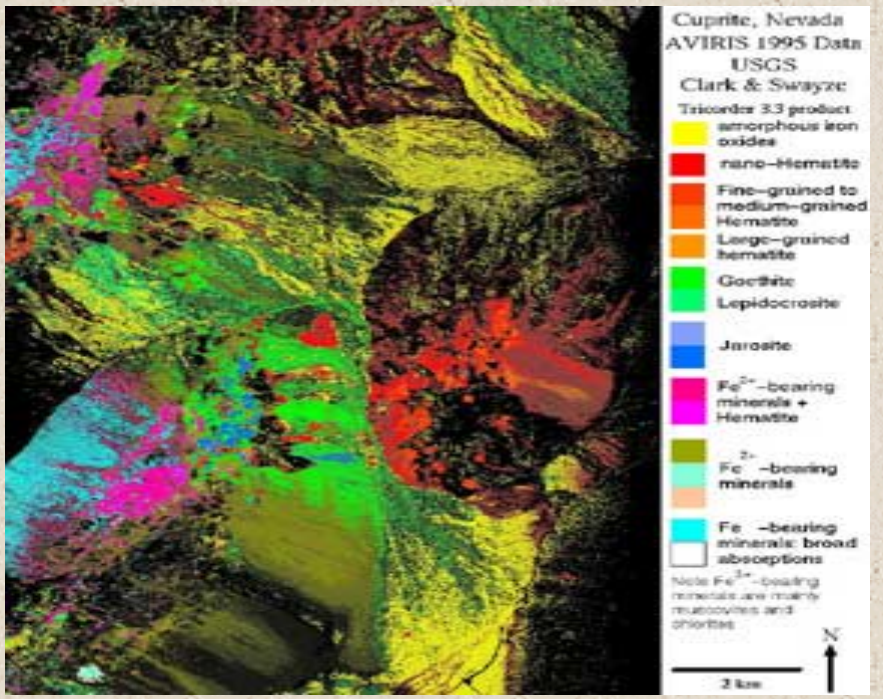
- 4 spectrometers
- From 0.4 to 2.5 micron wavelengths
- 224 channels
- flown on a NASA ER-2 aircraft
- altitude of about 20 kilometers



AVIRIS IMAGES

- Hematite, Goethite, and Jarosite
- shows iron minerals as distinguishable from chemical phases.





Conclusions

- **Environmental benefits:**

  developing of long term plans to rehabilitate and restore mine sites and to control acid runoff

- **Economic Benefits:**

  -cost savings in administration, accommodation, and logistic costs on site

  -images collected quickly, routinely, and reliably

  -different uses of the collected data: maps, GIS, reports, presentations