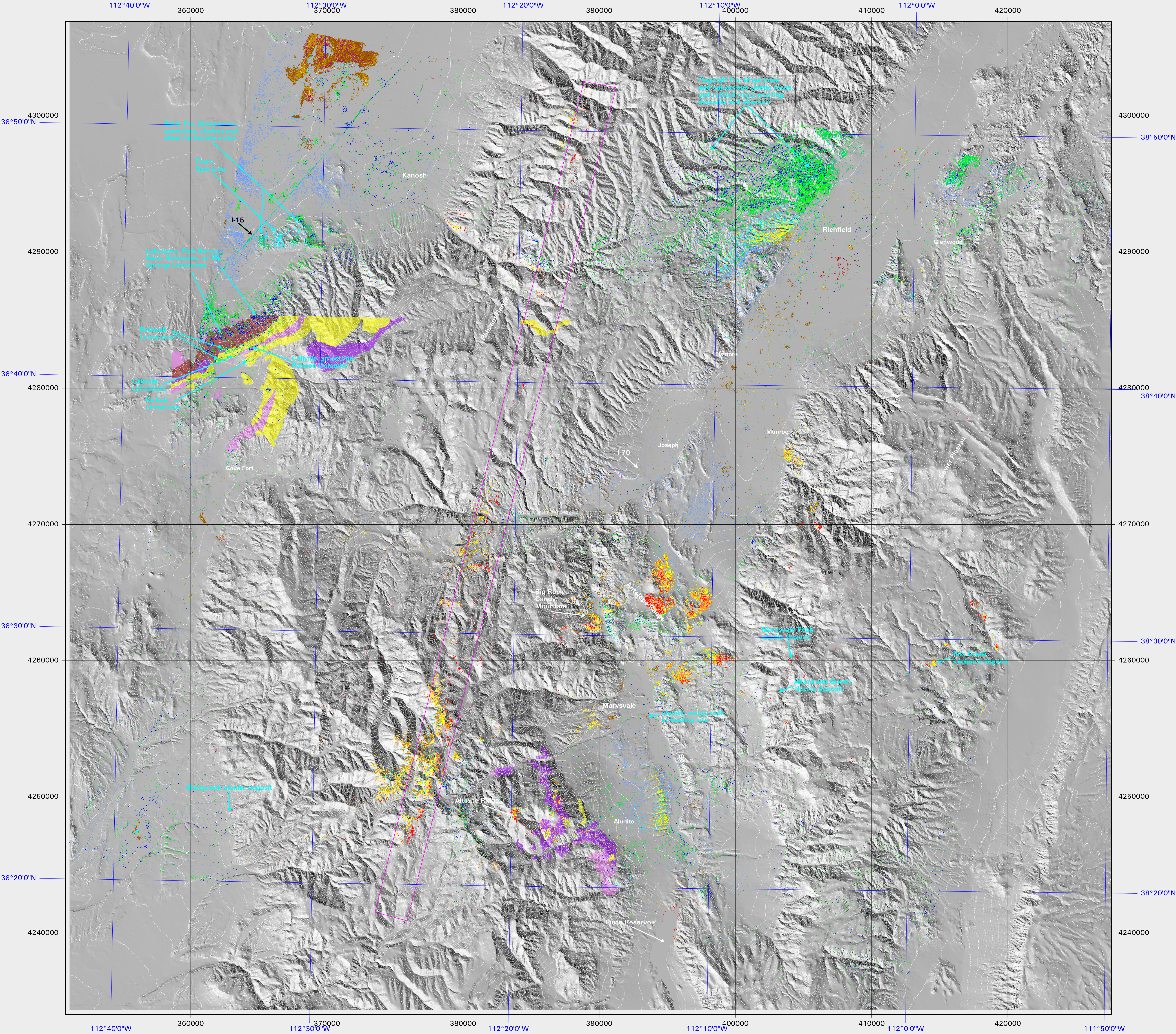


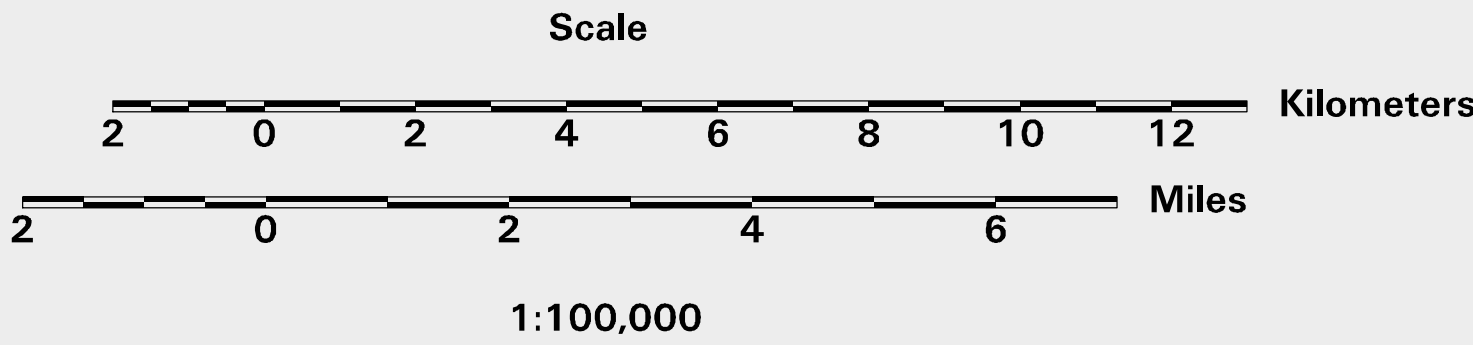
Map of Clay, Sulfate, Mica, Hydrous Quartz, Carbonate, and Mg-OH Minerals Derived from ASTER Data
Tushar Mountains/Pahvant Range/Sevier Plateau, Utah



- ASTER Scene ID: SC:AST_L1B.003:2007212624
- Acquired June 12, 2002
- ASTER data orthorectified using a Projective Transform to mosaicked TerraServer digital orthophoto quadrangles and a 1/3 arc second digital elevation model (~10 m resolution) from the USGS National Elevation Dataset (NED, provided by USGS Seamless Data Distribution System).
- Topographic contours and shaded relief image derived from 1/3 arc second NED digital elevation model. Contour interval 50 m.
- Spectral analysis by Barnaby W. Rockwell, March 2004

Indurated sedimentary rocks from Rowley and others (2002):

- limestones +/- interbedded calcareous clastic rocks
- dolomites
- Navajo Sandstone (locally altered to quartzite) and Cove Fort Quartzite
- mixed or undivided carbonate (limestone with local dolomite) and siliciclastic rocks including Eureka and Talisman Quartzites



Universal Transverse Mercator Projection
Zone 12
Clarke 1866 Spheroid
NAD 27 Horizontal Datum

- Region of image in which material identifications are unreliable due to defect in SWIR detector array ("Filter Scratch") (Iwasaki and Oyama, 2005).

Explanation for ASTER mineral mapping:	
Clay-bearing Assemblages - kaolinite +/- dickite/muscovite - kaolinite +/- sericite - kaolinite +/- amorphous (high-albedo surfaces with minor and/or minor kaolinite, often supergene) - montmorillonite/smectite, or low-abundance sericite * These minerals, including amphiboles, are often difficult to distinguish visually using ASTER SWIR data because of spectral similarities and/or sensor noise, and may co-occur as mixed and intimate mixtures. They also may be incorrectly identified in areas of sparse, dry vegetation.	Sulfate-bearing Assemblages - possible pyrophyllite +/- alunite/ alunite (w/ pyrophyllite)/ natronohalite, or alunite + minor kaolinite - alunite +/- kaolinite - sericite +/- gypsum, or ferric iron + hydrous quartz - gypsum +/- clays * These assemblages may represent mixed mixtures of clay/mica + dry vegetation or areas of sensor instability related to low or high surface albedo.
Carbonate and Fe/Mg-OH Minerals* - calcite - dolomite - chert (Mg-OH SWIR + broad Fe-OH SWIR absorption) - epidote or calcite + dolomite mixture - calcite or chondrochalcite + sericite or amorphous	Sericite-bearing Assemblages - Al silicates/muscovite, or mixture of muscovite and chlorite, carbonate, and/or dry vegetation - hydrous quartz (chalcedony or opal), or jasperite/gypsum + clay/mica (near mapped occurrences of jasperite)