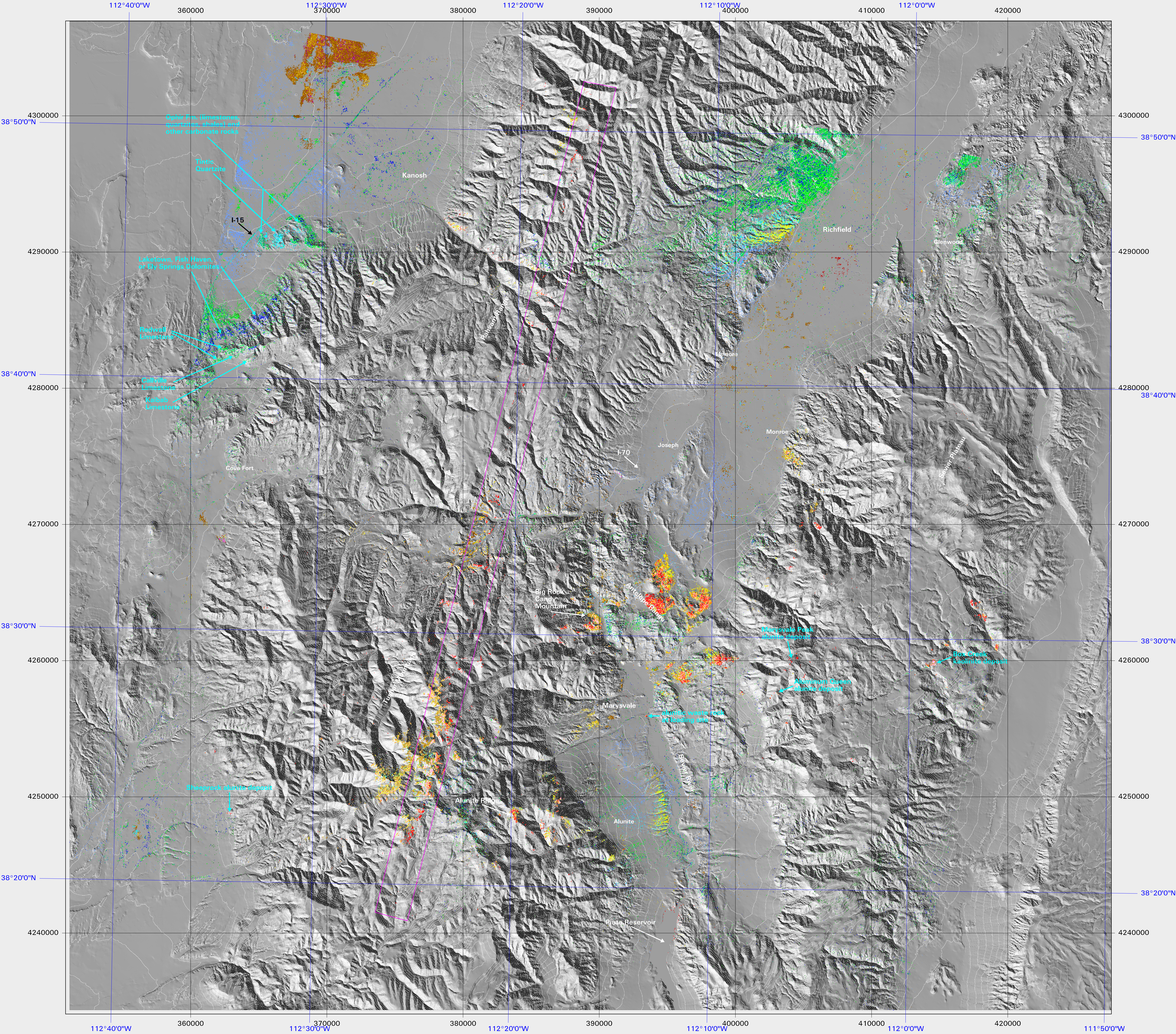
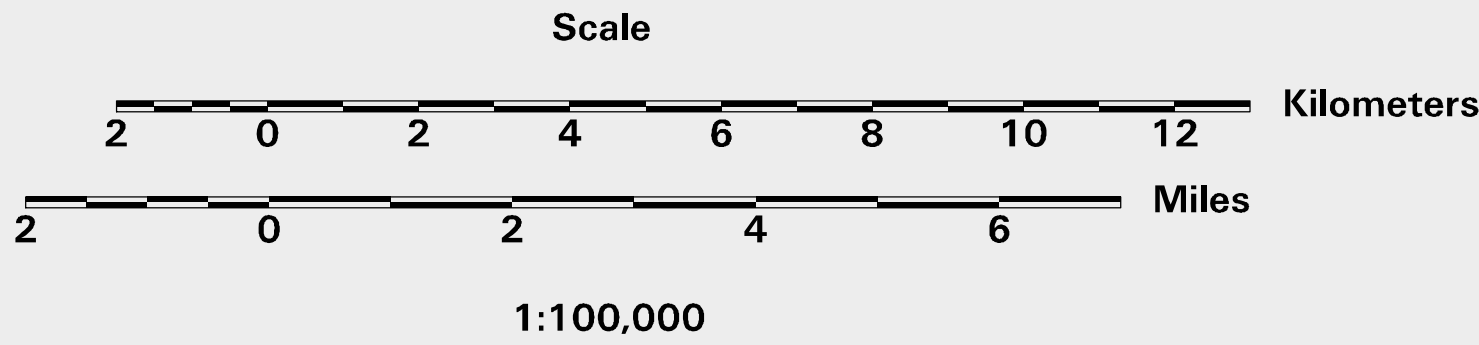


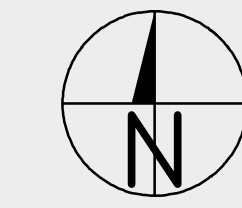
Map of Clay, Sulfate, Mica, Hydrous Quartz, Carbonate, and Mg-OH Minerals Derived from ASTER Data
Merged with Results of Dickite-Kaolinite Discrimination
Tushar Mountains/Pahvant Range/Sevier Plateau, Utah



- 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 2009



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	
dickite or well-crystallized kaolinite	kaolinite, poorly crystallized or impure
kaolinite +/- calcite	
kaolinite +/- smectite (high-albedo surfaces with minor and/or minor kaolinite, often supergene)	
montmorillonite/smectite, or low-abundance sericite	
Kaolinite-bearing assemblages may be misidentified in areas with sparse, dry vegetation +/- sericite or montmorillonite	
Carbonate and Fe/Mg-OH Minerals*	
calcite	dolomite
chert (Mg-OH SWIR + broad Fe2+/3+ VISIR absorption)	
epidote or calcite + dolomite mixture	
calcite or chondrochalcite	sericite or smectite
* These minerals, including amphiboles, are often difficult to distinguish reliably using ASTER SWIR data because of spectral similarities and/or sensor noise, and may co-occur as areal and intimate mixtures. They also may be incorrectly identified in areas of sparse, dry vegetation.	
Sulfate-bearing Assemblages	
possible pyrophyllite (+/- alunite)	alunite (+/- pyrophyllite)
natron/colemanite or alunite + minor kaolinite	
alunite +/- kaolinite?	
jarosite +/- gypsum, or ferric iron + hydrous quartz	
gypsum +/- clays	
* These assemblages may represent areal mixtures of clay/mica + dry vegetation or areas of sensor instability related to low or high surface albedo	
Sericite-bearing Assemblages	
Al illite/muscovite	AlFe illite/muscovite, or mixture of muscovite and chlorite, carbonate, and/or dry vegetation
hydrous quartz (chalcedony or opal), or jarosite/gypsum + clay/mica near mapped occurrences of jarosite	