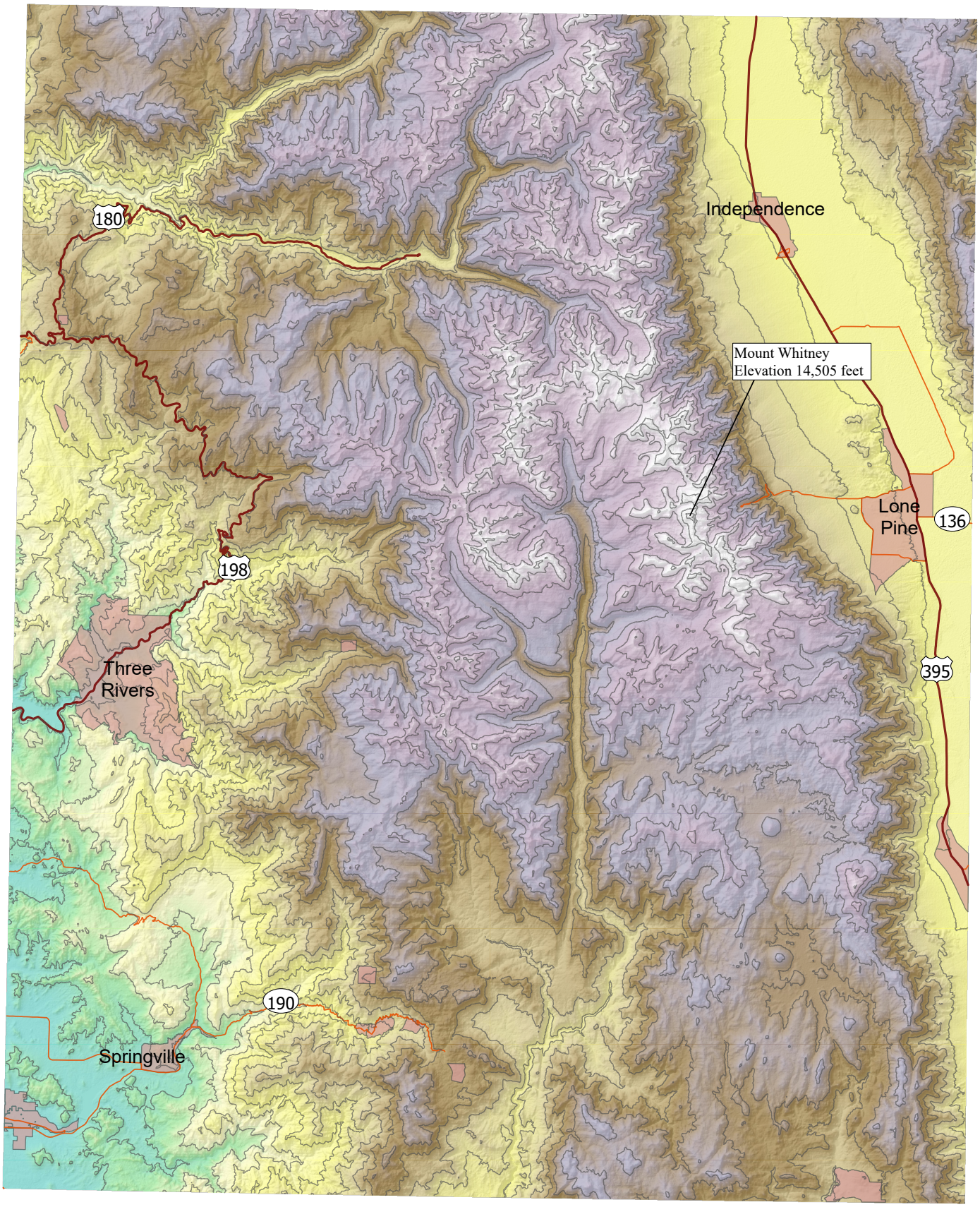
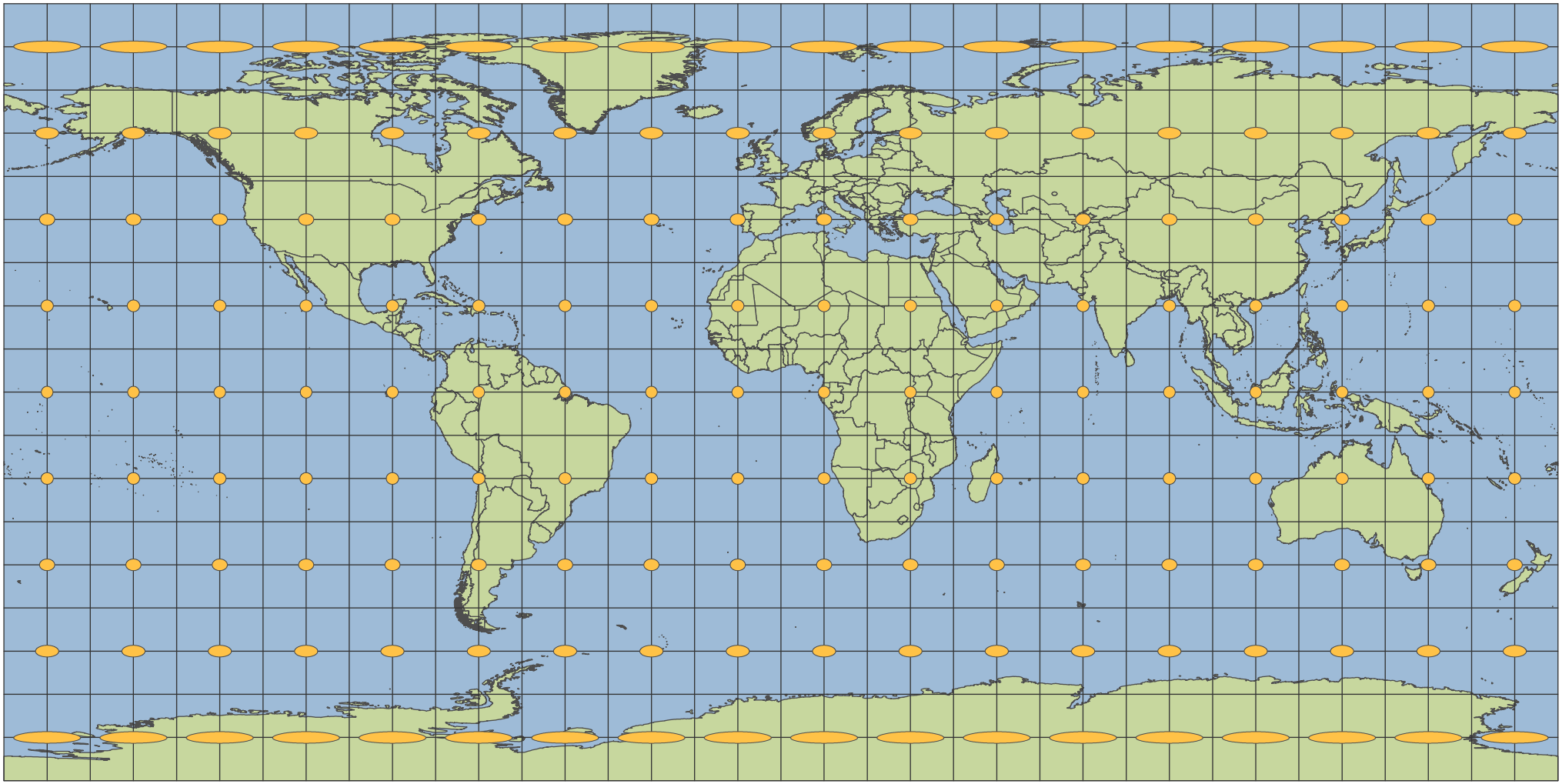
Digital Elevation Model / Reference Map
Sierra Nevada Mountains near Mount Whitney



Contour lines @1,000 ft. interval
Scale: 1:500,000
Center: 118°30'27"W 36°30'15"N

Cartography by Aaron Goodman
Data source: UCLA GEOG XL 7 course website

WGS 1984 (non-projected geographic coordinate system)

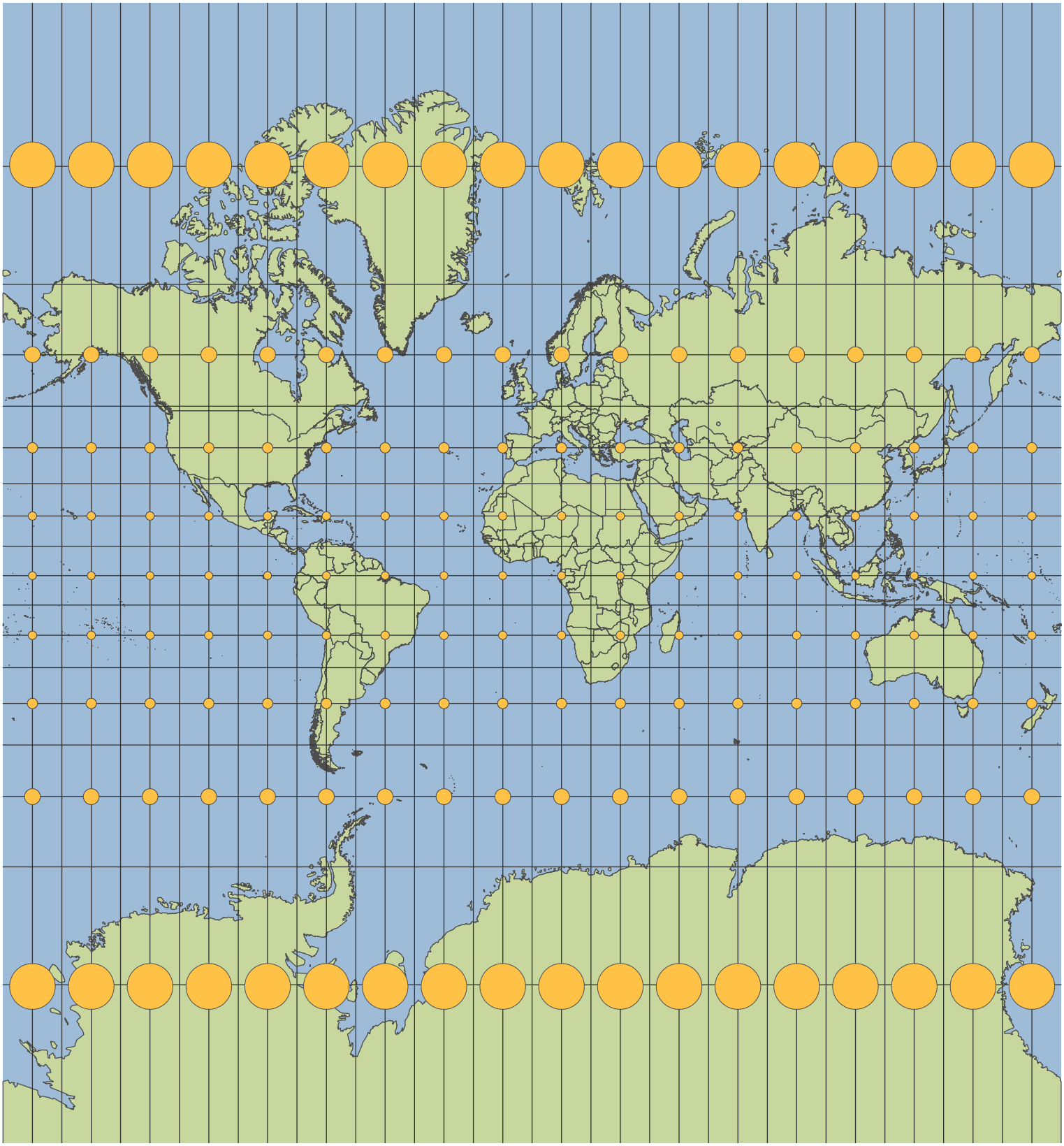


Spatial Reference
Name: GCS WGS 1984
GCS: GCS WGS 1984
Datum: WGS 1984
Map Units: Degree

Scale: 1:150,000,000

Cartography by Aaron Goodman
Data source: UCLA GEOG XL 7 course website

World Mercator (projected coordinate reference system)

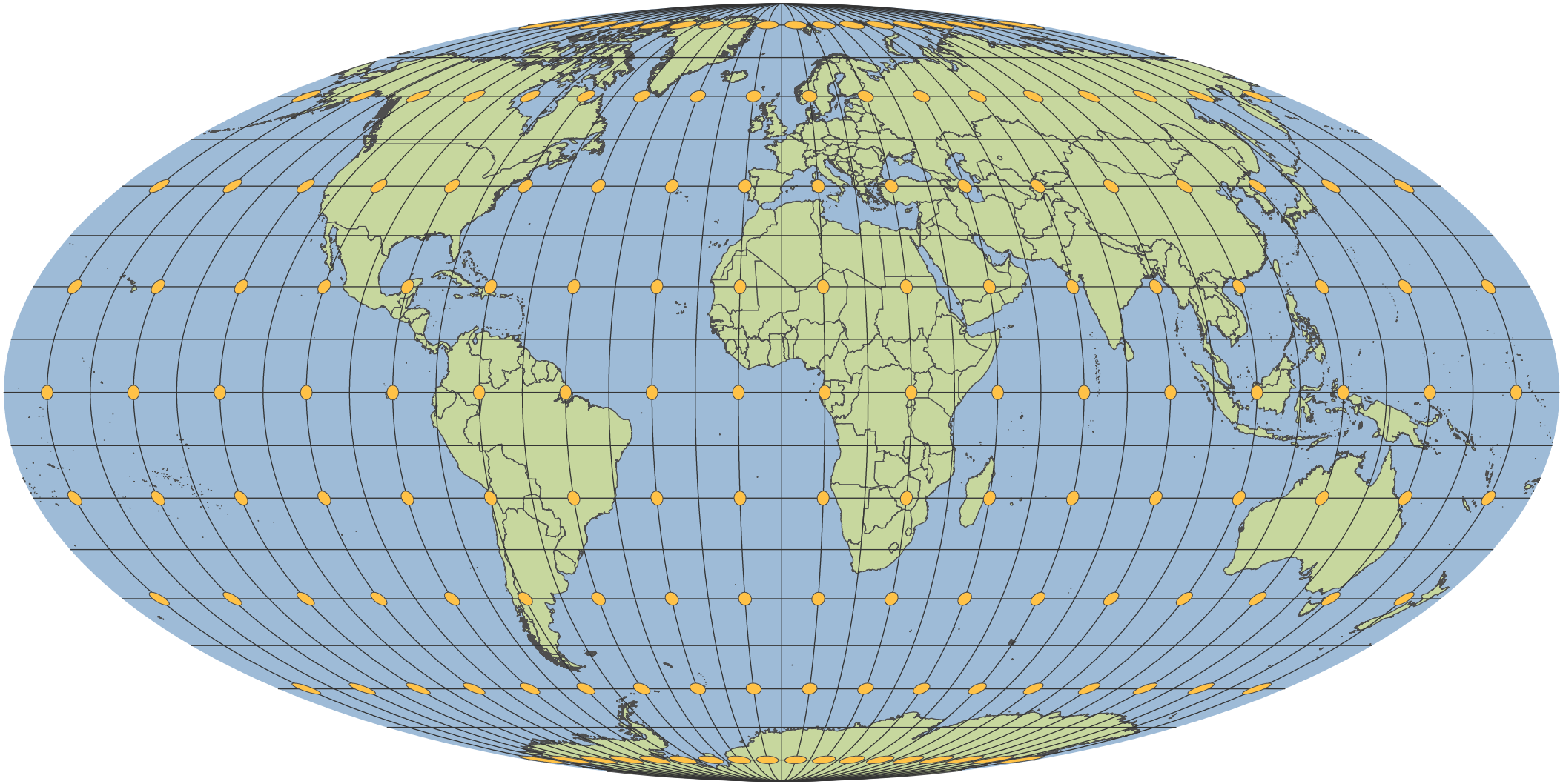


Spatial Reference
Name: WGS 1984 World Mercator
PCS: WGS 1984 World Mercator
GCS: GCS WGS 1984
Datum: WGS 1984
Projection: Mercator

Scale: 1:200,000,000

Cartography by Aaron Goodman
Data source: UCLA GEOG XL 7 course website

Mollweide (projected coordinate reference system)

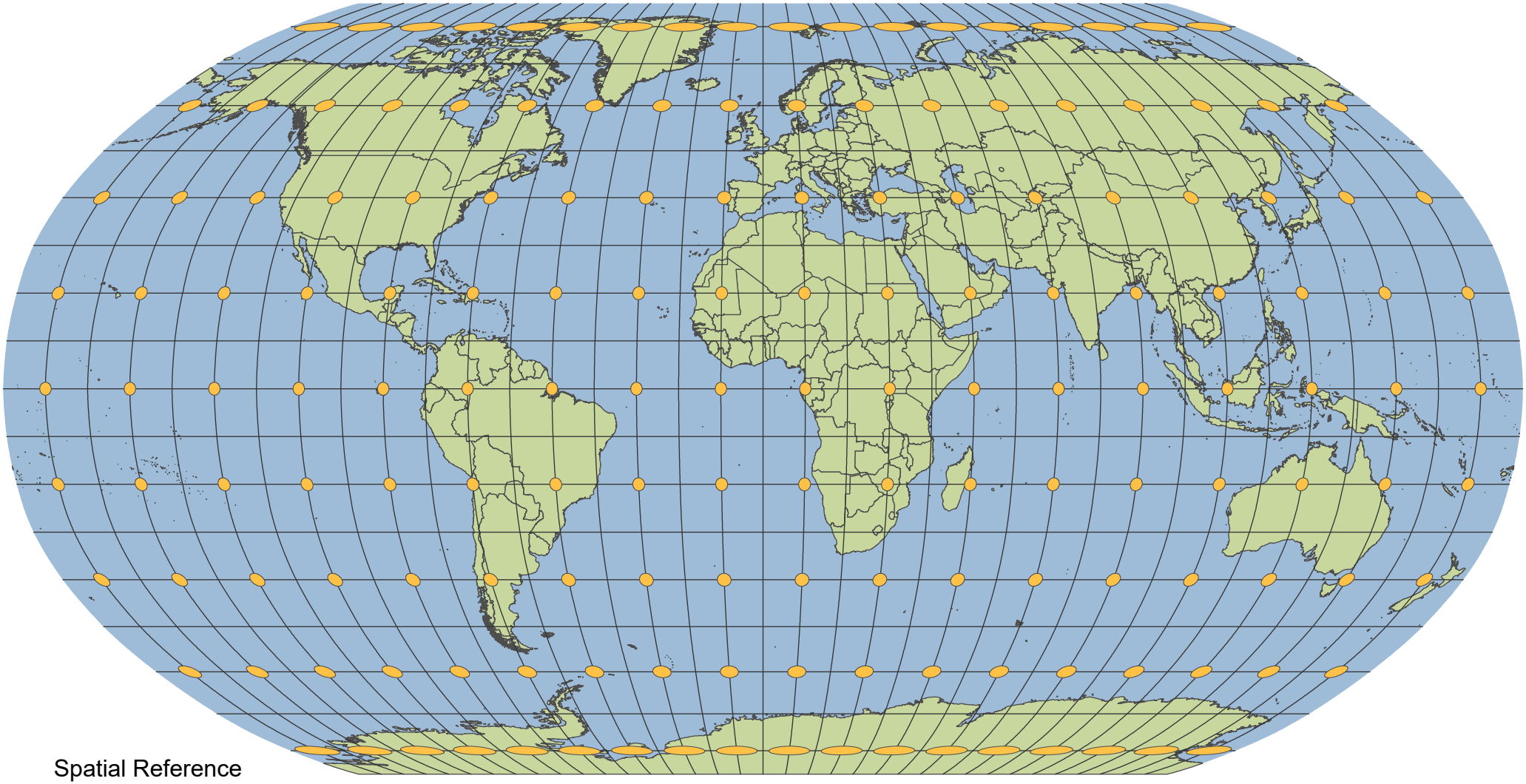


Spatial Reference
Name: World Mollweide
PCS: World Mollweide
GCS: GCS WGS 1984
Datum: WGS 1984
Projection: Mollweide

Scale: 1:130,000,000

Cartography by Aaron Goodman
Data source: UCLA GEOG XL 7 course website

Robinson (projected coordinate reference system)



Spatial Reference
Name: World Robinson
PCS: World Robinson
GCS: GCS WGS 1984
Datum: WGS 1984
Projection: Robinson

Scale: 1:125,000,000

Cartography by Aaron Goodman
Data source: UCLA GEOG XL 7 course website

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Ruth Engel
UCLA GEOG XL 7
7 June 2022

Week 8 Projection Mapping Written Questions

1. WGS 84 (non-projected geographic coordinate system)
   1.1: Tissot's indicatrices suggest that the World Geodetic System (WGS) preserves most geometric properties until the extreme northern and southern poles, where scale and distance grow more distorted.
   1.2: WGS 84's distortion is most extreme at the poles.
   1.3: This system may be appropriate for global scale maps whose depicted variables do not depend on accurate area, or whose extent does not lie too close to the poles.
2. World Mercator (projected coordinate reference system)
   2.1: The World Mercator projection's Tissot indicatrices suggest that shape is accurately preserved while scale, distance, and direction grow distorted at the poles.
   2.2: World Mercator's distortion occurs at its northern and southern poles.
   2.3: Like WGS 84, this projection would be appropriate for global extent maps who do not focus on or even include the poles. Maps focusing on equal area should not use World Mercator, nor should maps with polar extents who depend on accurate distance.
3. Mollweide (projected CRS)
   3.1: The Mollweide projection does not preserve direction, though it somewhat maintains area, distance and scale until the poles. Shape is less preserved.
   3.2: The Mollweide projection's distortion occurs at its poles and extreme western and eastern ends.
   3.3: This projection may be appropriate for global trend mapping. It would not be appropriate for navigation.
4. Robinson (projected CRS)
   4.1: The Robinson projection offers slightly better preservation with similar foci as the Mollweide projection. Shape, area, distance, and scale are mostly maintained.
   4.2: The Robinson projection's distortion is at its poles and edges.
   4.3: Similarly to the Mollweide projection, the Robinson projection may be appropriate for global extent maps depicting trends dependent or cognitively related to accurate area. This would not be appropriate for navigation.