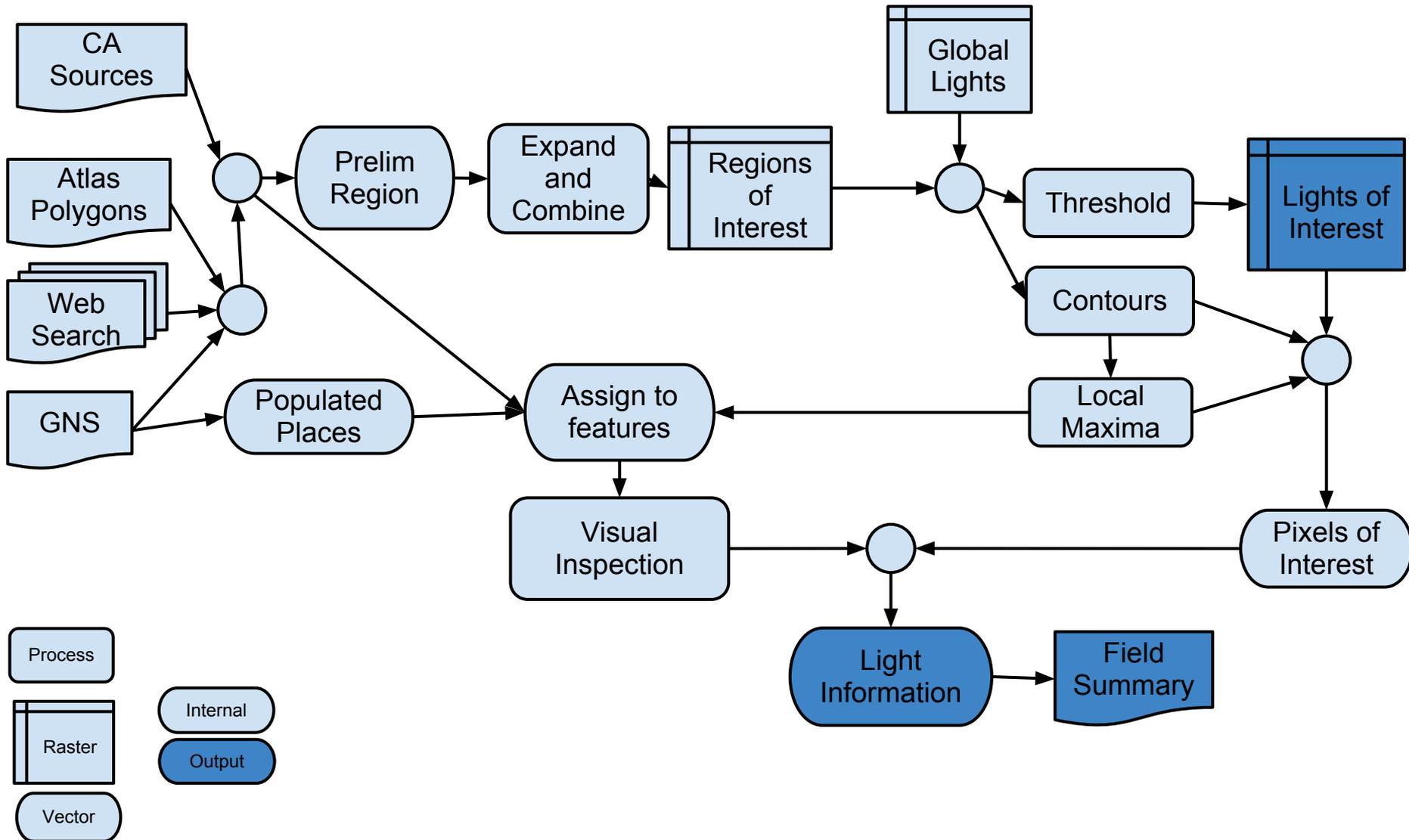
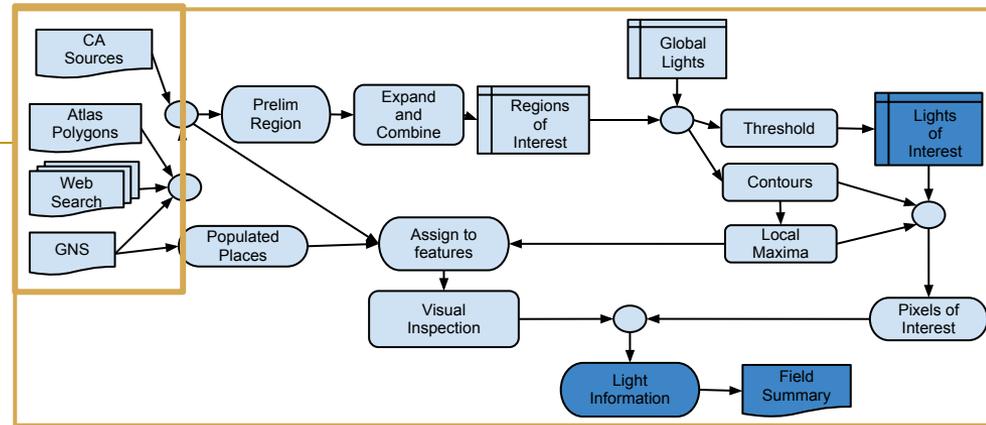


Quinn Hart <qjhart@ucdavis.edu>
University of California, Davis
July 12, 2012

Facility based Flaring Estimates

Flare / Field Association Process Overview

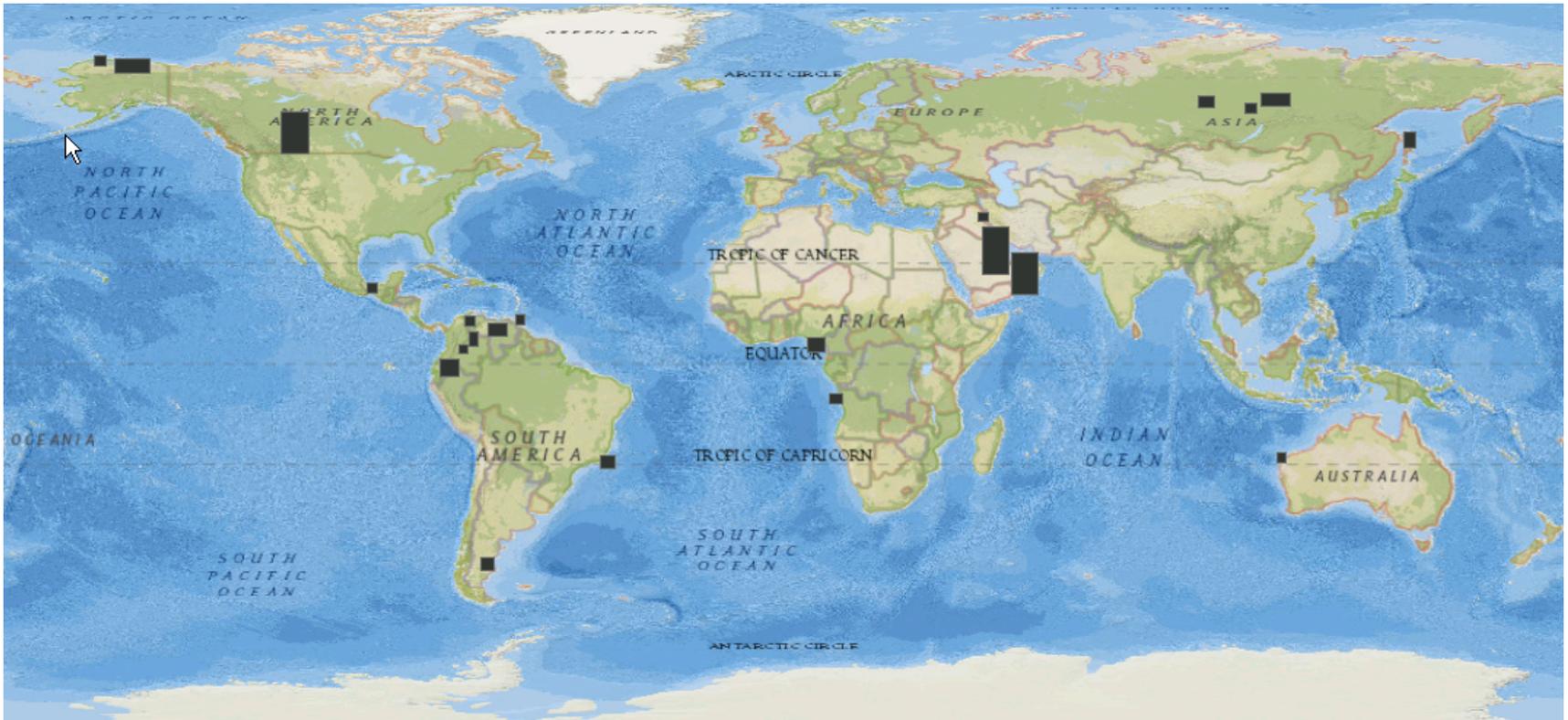
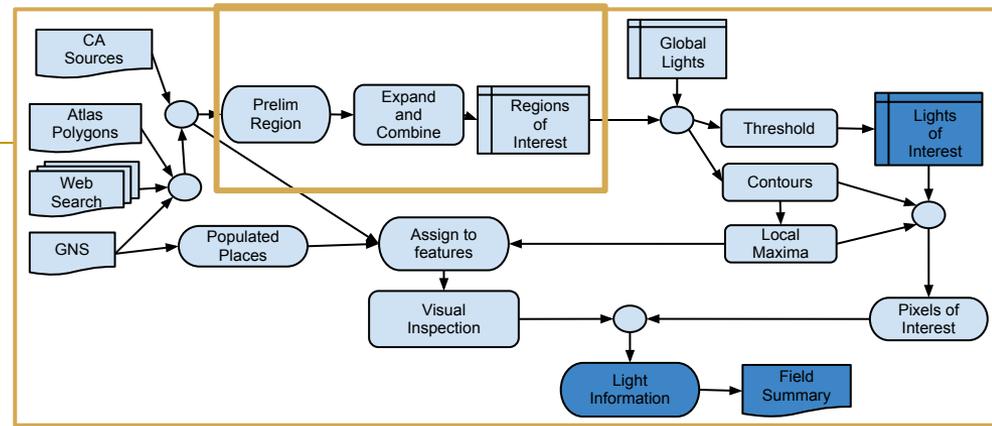




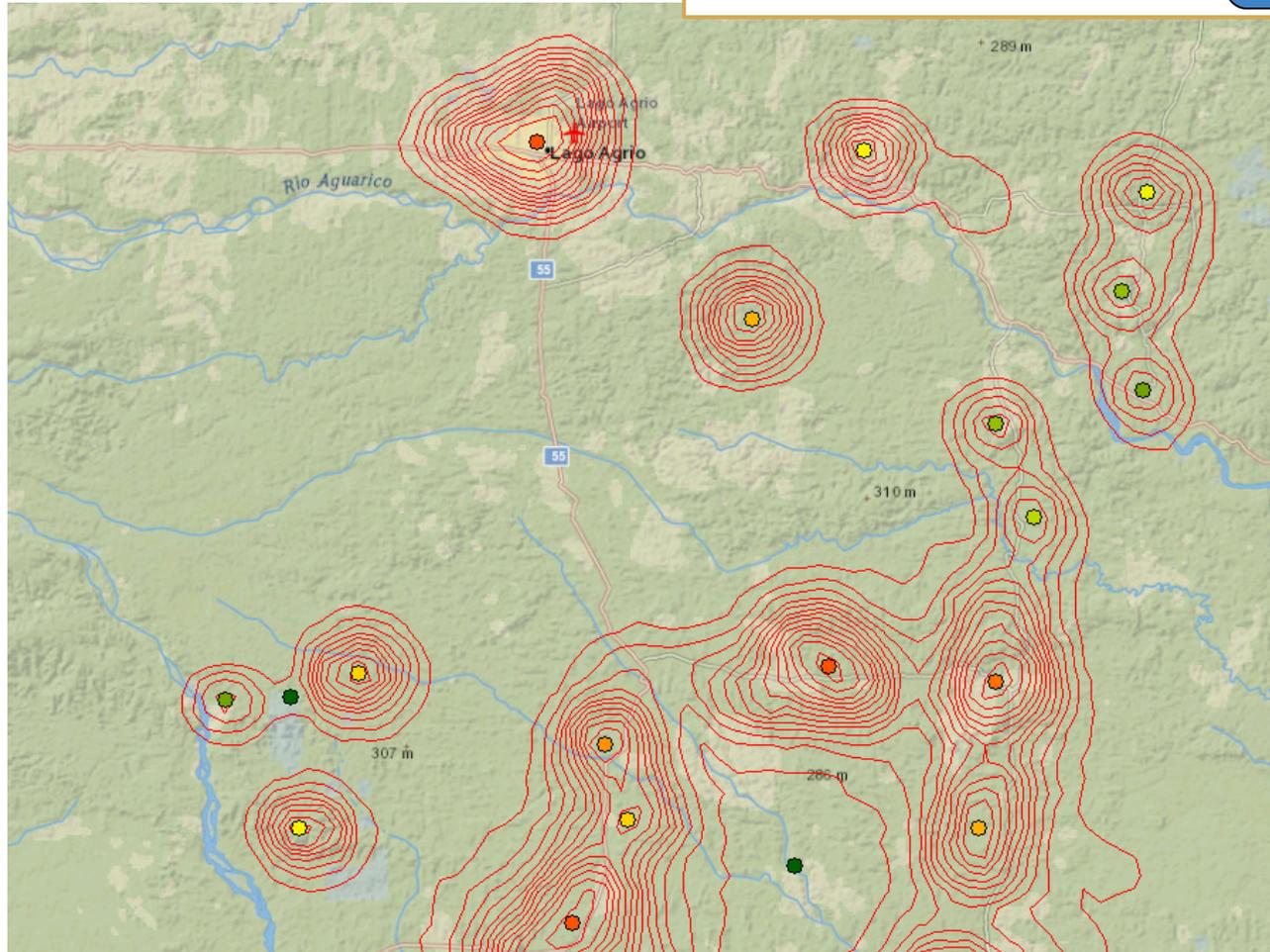
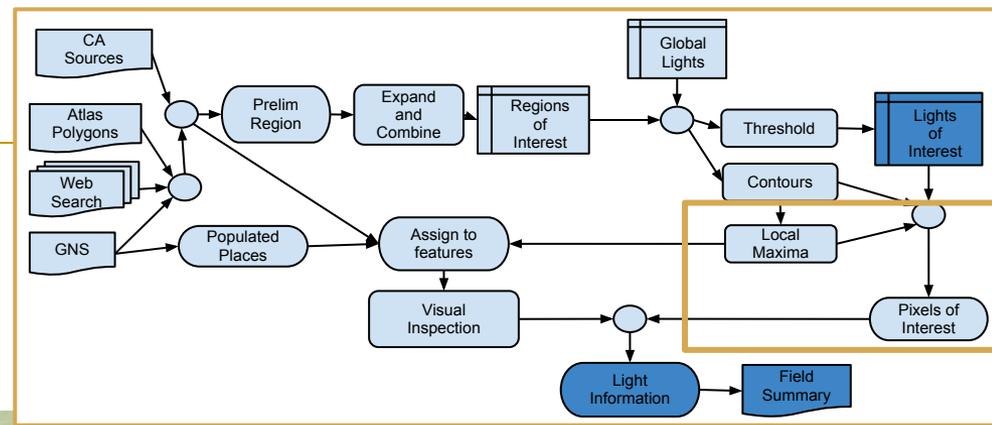
- **California Facility Sources**
 - Supplied by CARB
- **Atlas:** Petroleum Economist Ltd WORLD ENERGY ATLAS
 - Region data
 - Field names and types
- **GNS:** National Geospatial-Intelligence Agency. GEOnet Names Server (GNS)
 - Point data
 - Includes populated places, etc.
- **Internet Searches**
 - Locations
 - Descriptive text

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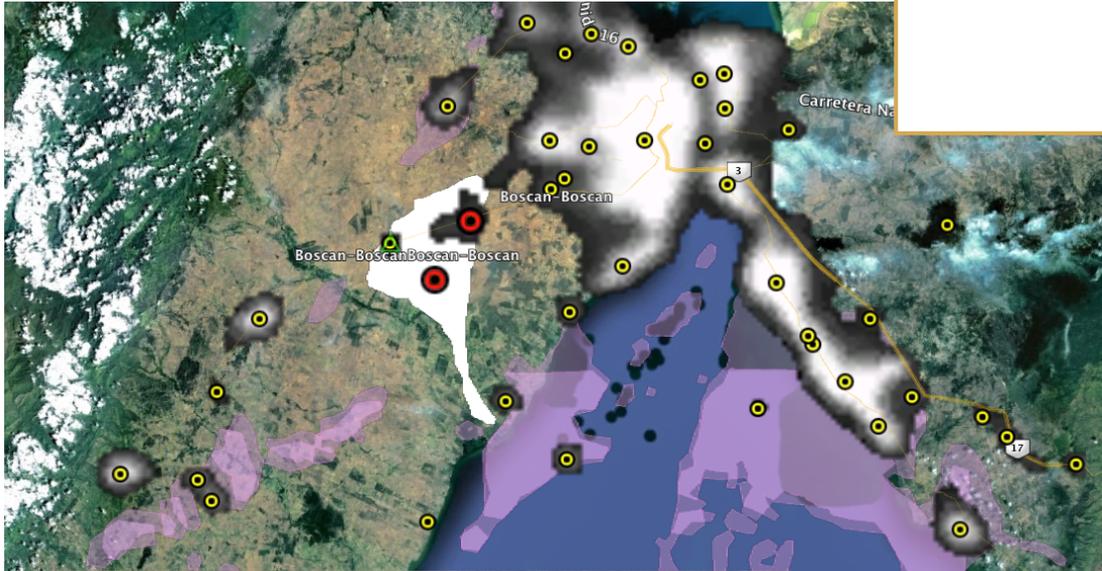
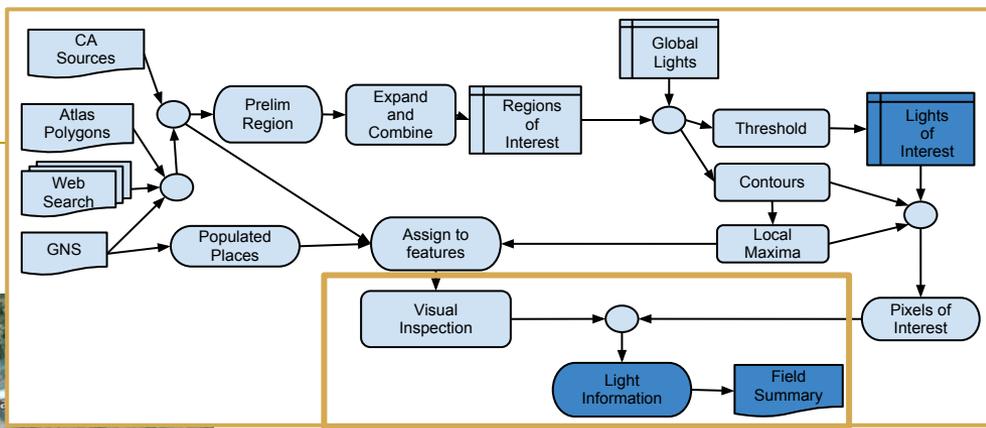
Regions of Interest



Contours and Centers Example



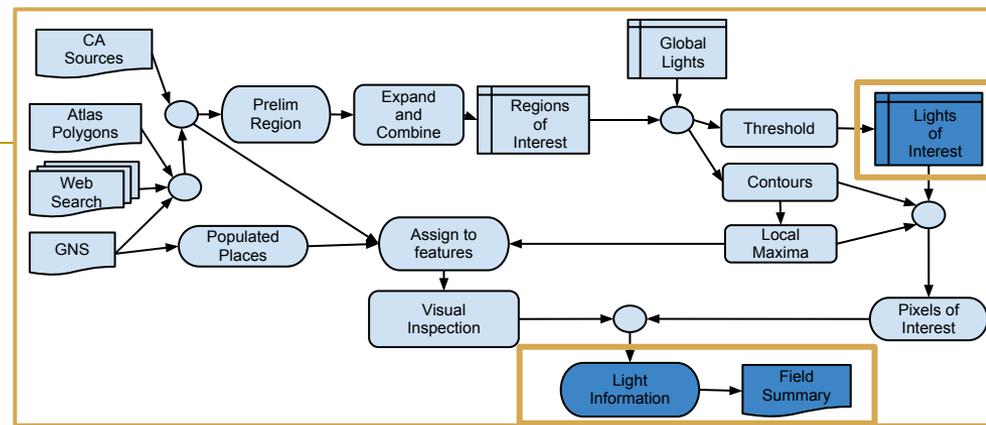
Visual Inspection



Light Source	Count
Flaring site	134
Ocean	20
Populated Place	58
Facility	23



Outputs



- **Location Overview**
 - **Google Earth KML file**
- **Facility Flaring Tables**

Field	Number flares	Number Pixels	Total Light	Flaring [MCM]
Boscan	2	105	1020	27.13
Majnoon	1	470	8515	226.5

- **All Light Sources**
 - **Point data summaries**

Acknowledgements

- **NOAA / Chris Elvidge**
 - **DMSP processed files**
 - **Flaring Algorithm and validation**
- **Google**
 - **High resolution imagery**
 - **Google Earth**
 - **Fusion Tables**
- **Energy Atlas, NGA, Google, etc**
 - **Facility Sources**