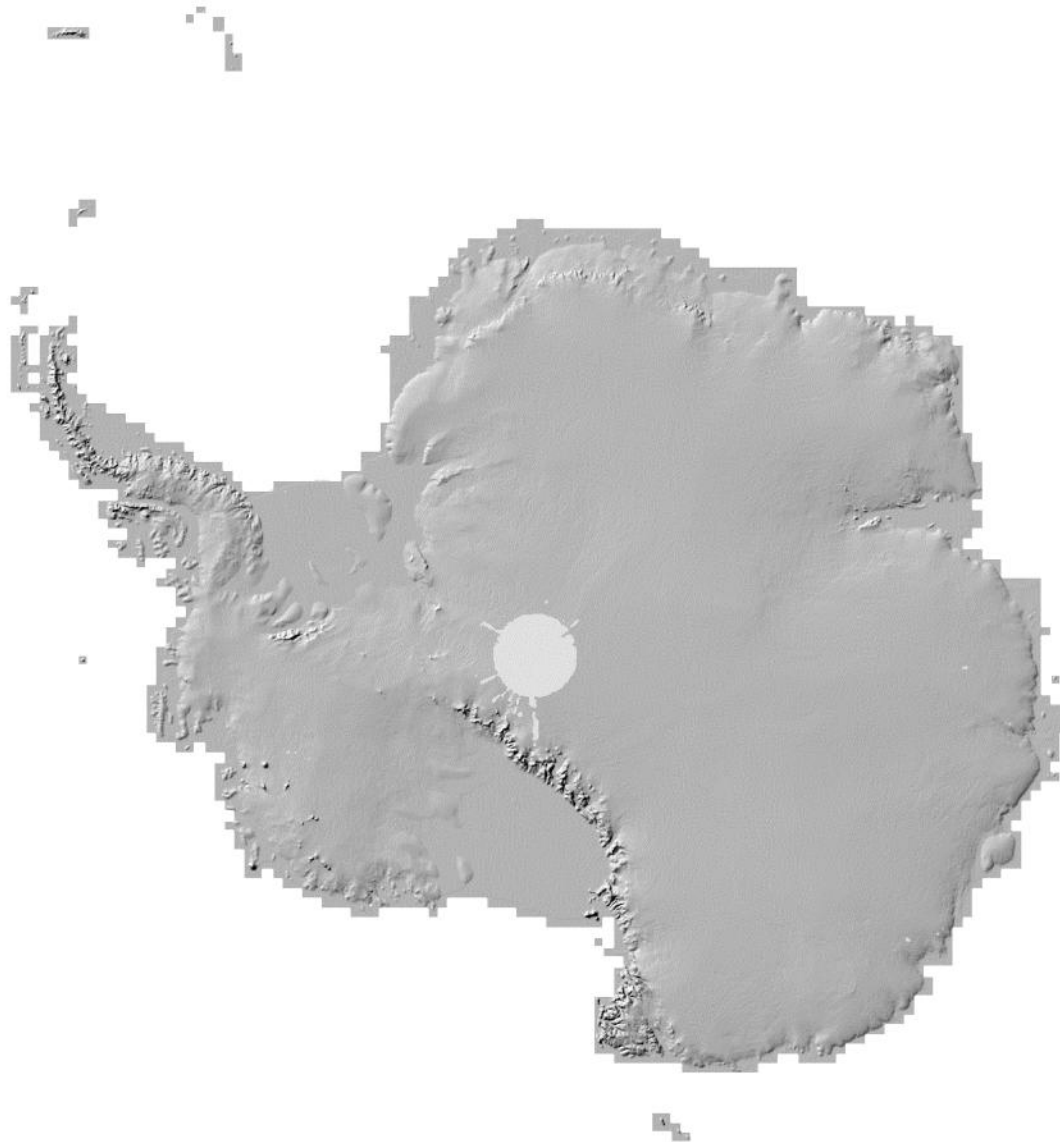


# United States Antarctic Program Annual Report to SCAGI

Cole Kelleher  
Polar Geospatial Center

**October 21<sup>st</sup>, 2022**

# UPDATE 1: REFERENCE ELEVATION MODEL OF ANTARCTICA (REMA)

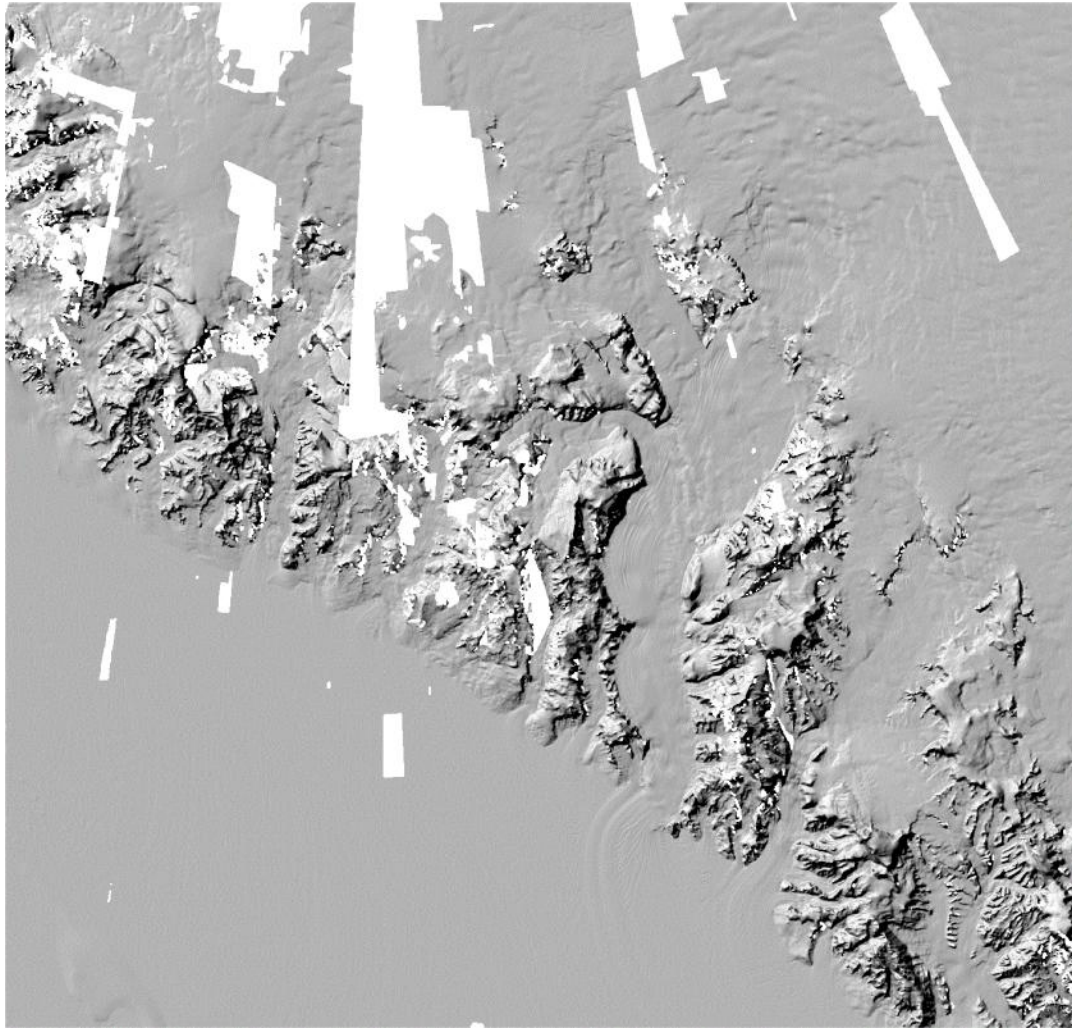


REMA v1 vs REMA v2

## REFERENCE DATA MODEL OF ANTARCTICA (REMA) Version 2

- REMA version 2 was released in October 2022 and incorporates an additional 4 years (2017-2021) of elevation data.
- Expanded coverage along the Antarctic Peninsula and Sub-Antarctic Islands
- All data now processed to 2m resolution
- New median mosaic technique for mosaic tiles for improved mosaic output
- Individual stereo strip DEMs and mosaic tiles both available
- Strip DEMs are now unmasked with auxiliary water and cloud masks for end user application
- Delivered as 32-bit GeoTiffs referenced to the WGS84 ellipsoid
- Reduced resolution mosaic versions also available (10m, 100m, etc.)

## REFERENCE DATA MODEL OF ANTARCTICA (REMA) Version 2



<https://www.pgc.umn.edu/data/rema/>

# UPDATE 2: US ANTARCTIC PLACENAME COORDINATE LOCATION IMPROVEMENT



## Delivery

1. Point features provided to US-ACAN for approval (confidence rank 1-5) via PGC-developed mapping application
1. 11,120 high-confidence corrected and ACAN approved names delivered to USGS in the Spring of 2022 for integration into GNIS (rollout TBD)
1. Once the USGS GNIS is updated, the coordinate improvements will then be shared and integrated into the SCAR CGA.



SCAR Gazetteer Search Download Information Login Pass Logout

### Admiralty Mountains

SCAR Gazetteer Ref. No 88

Feature type: Mountain (2a)

#### Origin

This name originates from **United States of America**. It is part of the United States Gazetteer and the SCAR Composite Gazetteer of Antarctica.

Names that other countries have for this feature:

- Admiralty Mountains (New Zealand)
- Admiralty Mountains (Russia)

#### Narrative

A large group of high mountains and individually named ranges and ridges in NE Victoria Land which are bounded by the sea, and by the Dennistoun, Ebbe, and Tucker Glaciers. Discovered in Jan. 1841 by Capt. James Ross, RN, and named by him for the Lords Commissioners of the Admiralty under whose orders he served.

#### Location

Latitude:	71° 45' 00 0" S	-71 750'	Unknown precision
Longitude:	168° 30' 00 0" E	168 500'	Unknown precision
Altitude:	Not recorded		Unknown precision
Region:	Not recorded		



# U.S. ANTARCTIC PLACE NAMES

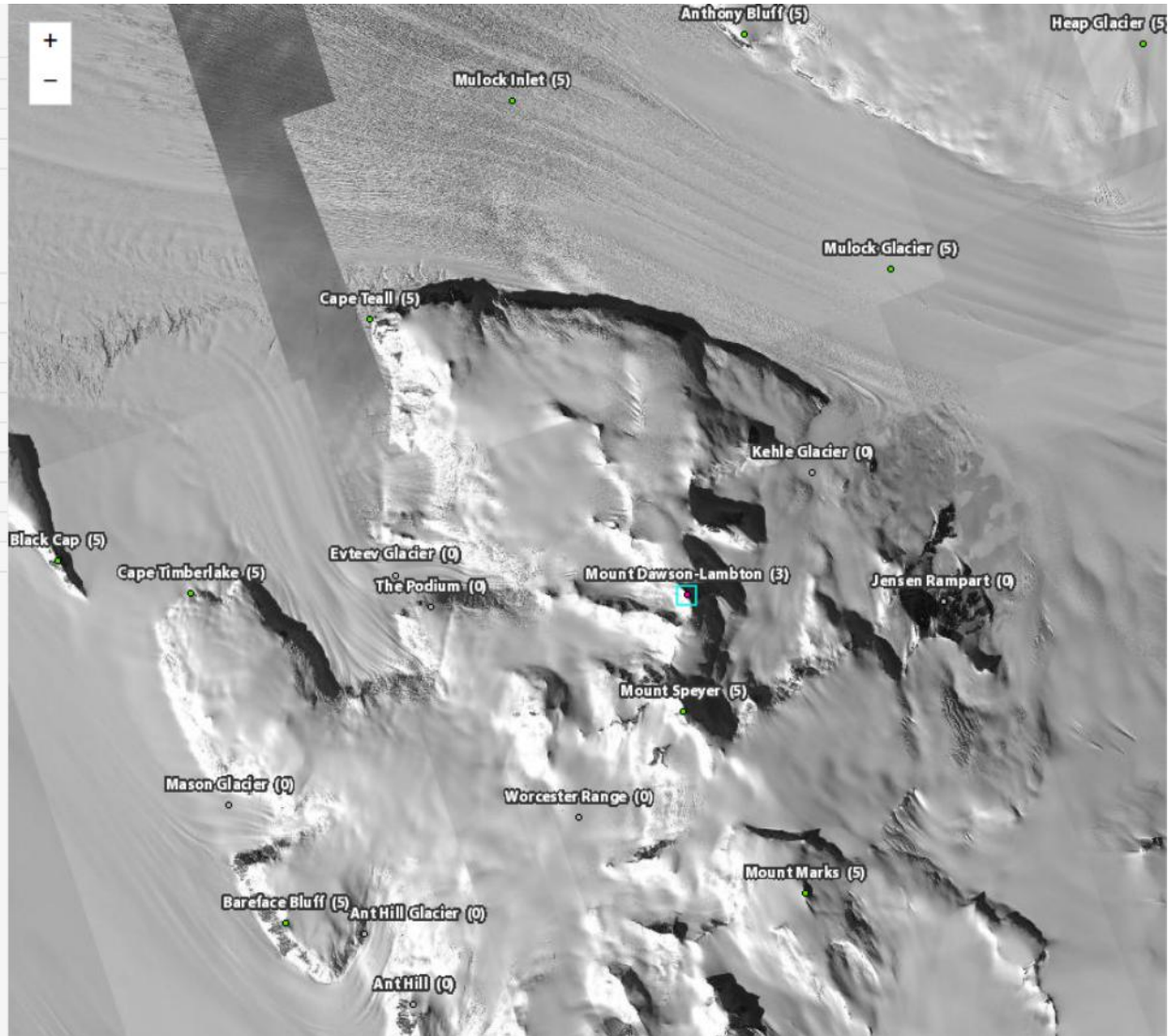
Review Selected (1)    Need Review (392)    Map Options

Feature Name	Mount Dawson-Lambton
Feature Type	Peak
SCAR ID	3404
Narrative	A mountain, 2,295 m, standing 3 mi SW of the summit of Mount Speyer in the Worcester Range. Discovered by the BrNAE (1901-04) and named after the Misses Dawson-Lambton, contributors to the expedition.
Latitude	-78.90378226°
Longitude	160.63418516°
Coordinate Accuracy (m)	20
Location Improved?	Yes
Improved By	Reim: Polar Geospatial Center (PGC)
Confidence Rank (values)	3
Source Type	Satellite Image
Source Name	PGC 50cm Imagery Mosaic
ACAN Reviewed?	Out for Review
ACAN Reviewer	
ACAN Review Comments:	

FLAG

ACCEPT

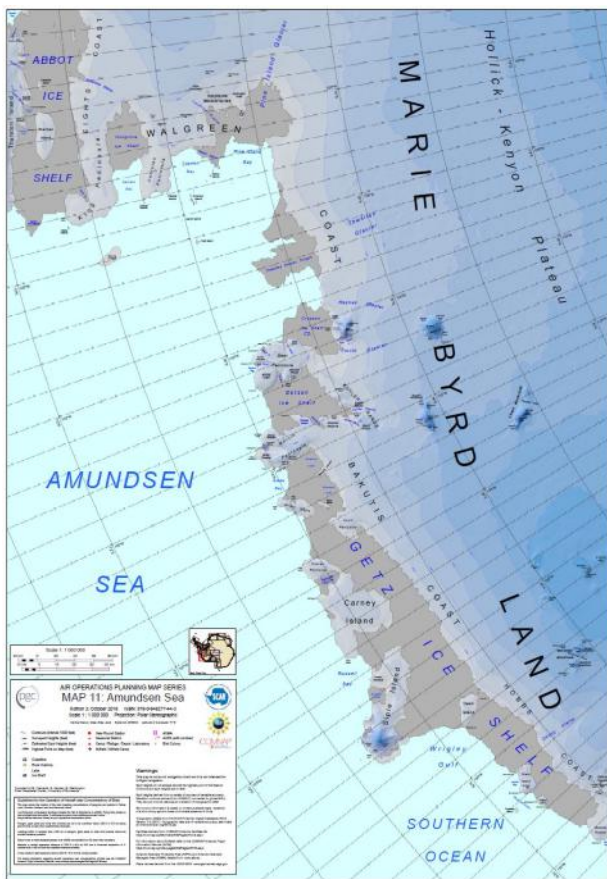
RESET



Prototype web interface for ACAN place name coordinate improvement approval

## FUTURE WORK: SCAGI 1:1,000,000 AIR OPERATIONS MAPS

The 1:1,000,000 Air Operations Maps (#11 - #16) updated in 2019 for Edition 4 will need to be updated to Edition 5



*Air Operations Map #11 – Amundsen Sea*

REMA v2 can now be used to update the basemap, elevation contours, and spot heights

A review of other map specifications and potential improvements for this map series would be useful

Previous editions of this map series have been very popular among the international Antarctic science and logistics communities