

THE TONGUE OF THE OCEAN

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Because of its expanded spectral interval (0.4 to 1.1 microns), the Defense Meteorological Satellite Program (DMSP) space craft depicted many grey-shaded phenomena of use to meteorologists, oceanographers and environmentalists. Anomalous Clouds (Brandli and Orndorff, 1976), Invisible Clouds (Brandli and Taylor, 1975), Pollution (Brandli and Daniel, 1978), and Earth Resources (Brandli, 1974) are some of the examples.

Fett (1977) has done much work on the DMSP anomalous grey-shaded phenomena. "Anomalous grey shades" is a term applied to light-tone and occasional dark-tone grey shade patterns observed on the DMSP visible imagery. The observation of anomalous grey shades can often be related to

presence or absence of atmospheric moisture in cloud-free areas, in areas of incipient cloud development, in haze areas, areas of blowing sand or dust, smoke and turbid water, or river discharge also appear as light tone areas.

Grey-shade patterns in shallow water are related to bottom topography. Exceptional detail of ocean water depth variations over the Bahama Islands and other similar island chains can sometimes be obtained.

Water coloration is affected by silt but also by chlorophyll. Blue water is associated with the absence of chlorophyll, while green water has vast amounts of chlorophyll. Such difference in color-

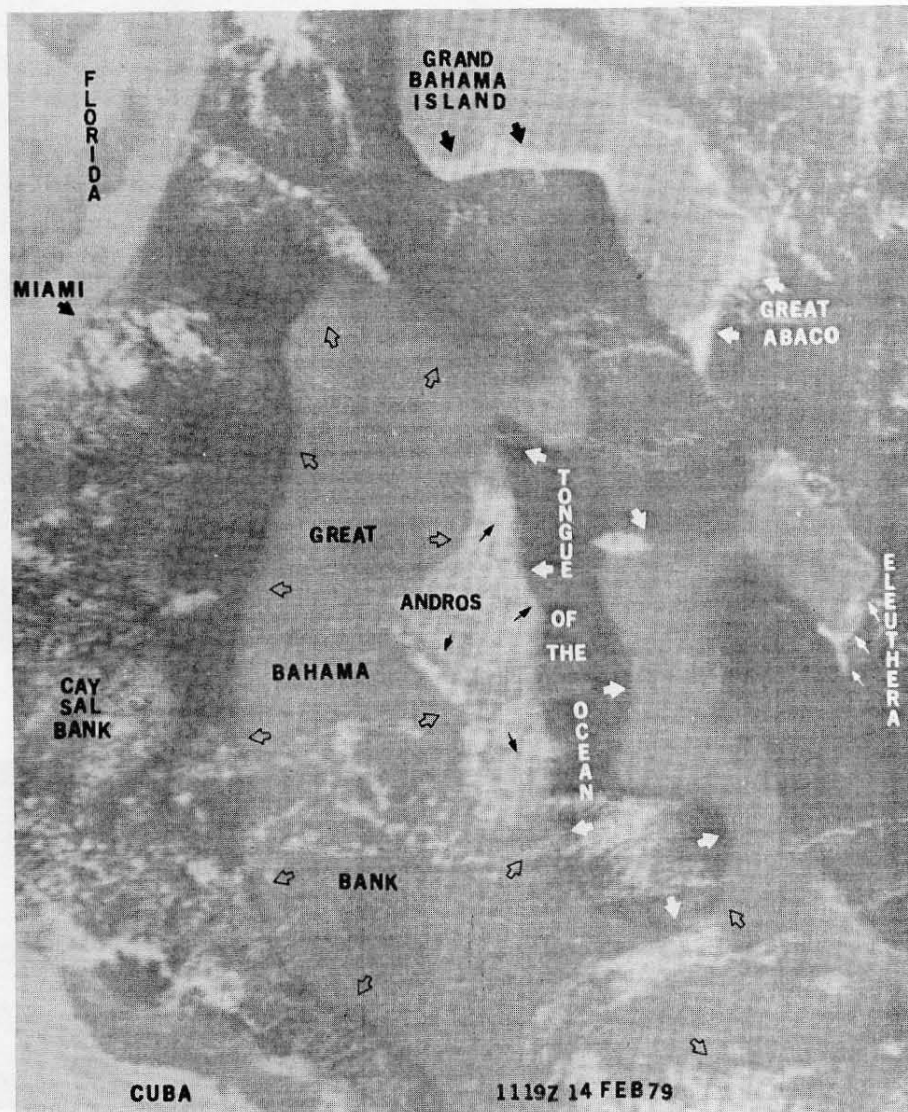


Figure 1. DMSP visual photo.

ation translates into reflectivity.

Figure 1 shows a DMSP visual photo in the Bahama area off Florida. Shallow water (light grey) as well as deep water (dark grey) around Andros Island particularly stand out. The deep water east of Andros called "the tongue of the ocean" is clearly delineated.

Figure 2 is an ocean topographic map confirming the water depth pattern of the DMSP visible imagery.

REFERENCES

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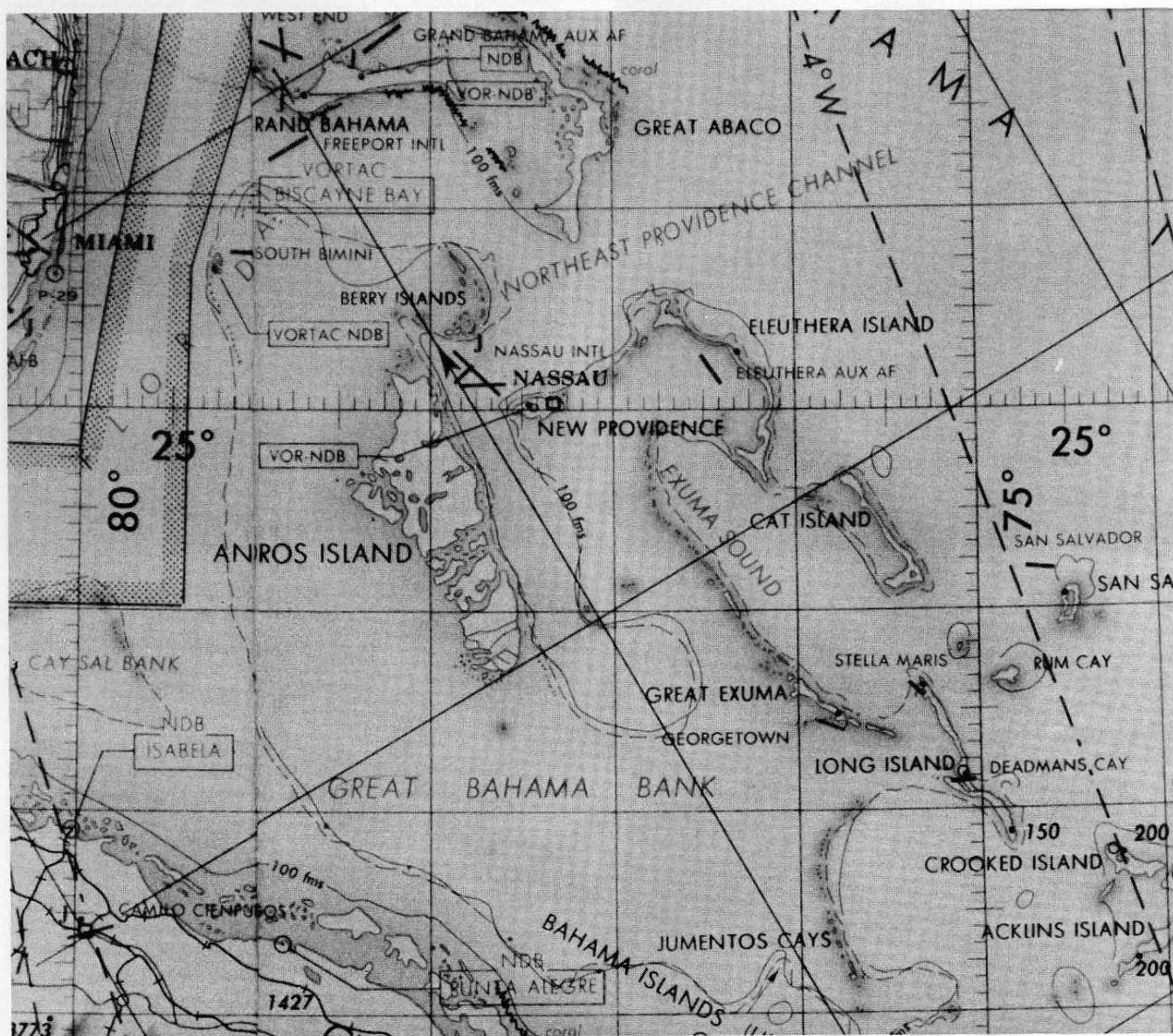


Figure 2. Ocean topographic map confirming what is shown in Figure 1.