

Over A Hundred Chinese Fishing Ships Remain In Philippine EEZ As Of May 18

Where did the ships from Whitsun Reef
go?

Analysis By Similarity

May 24, 2021



This report tracks the locations of more than 200 Chinese fishing ships that were first identified at Whitsun Reef in March, 2021.

Approximately 120 of these fishing ships remain in the Philippines Exclusive Economic Zone (EEZ). They are primarily located on the Philippine side of Tizard Bank.

Thitu Reef

The spatial relationship among the Spratly Island areas mentioned in this report.

Thitu (Pag-Asa) Island

Outside PHL EEZ

Demarcation of the Philippine EEZ

Inside PHL EEZ

Gaven Reef

Tizard Bank

Hughes Reef

Whitsun Reef

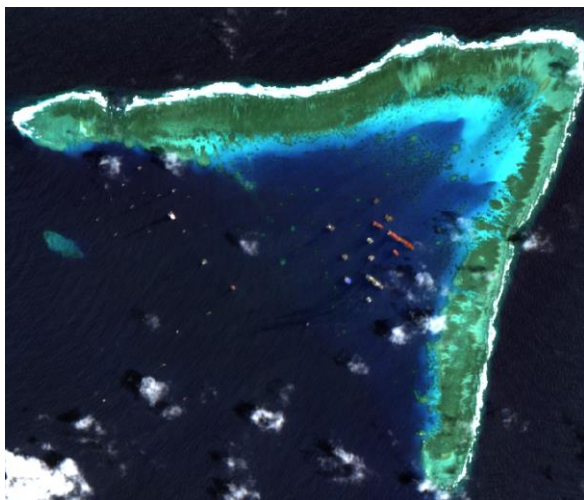
Union Banks

Imagery credit: European Space Agency – produced from ESA remote sensing data

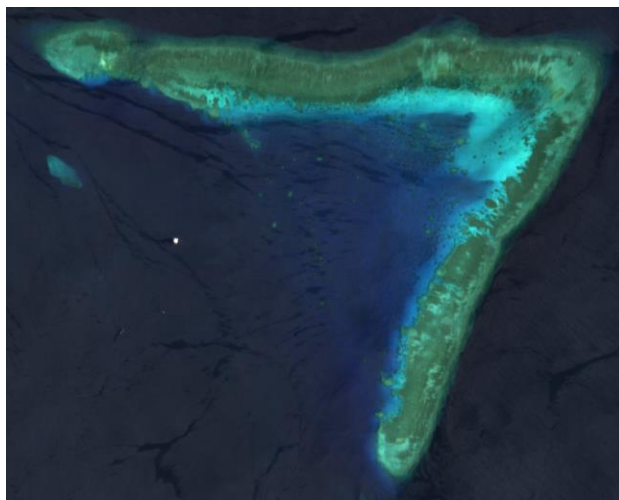
Union Banks – Whitsun Reef

Approximately 190 ships left between
March 24 and April 28, 2021

March 23-24, 2021
Approximately 200 ships



April 28, 2021
Approximately 11 ships



May 13, 2021
0 ships

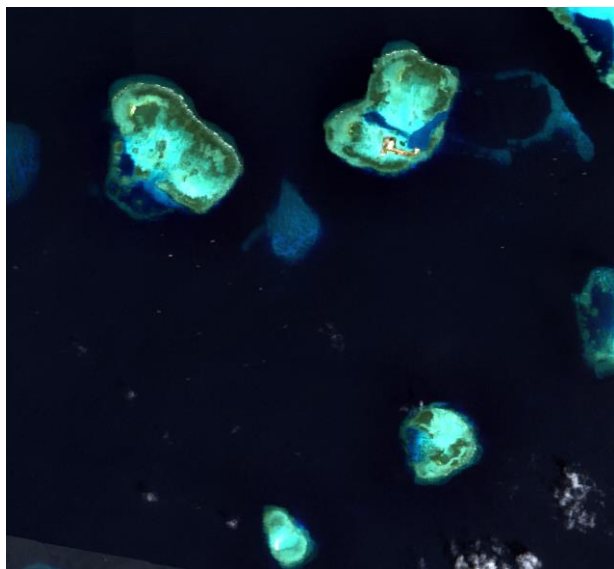


Imagery credit: European Space Agency – produced from ESA remote sensing data

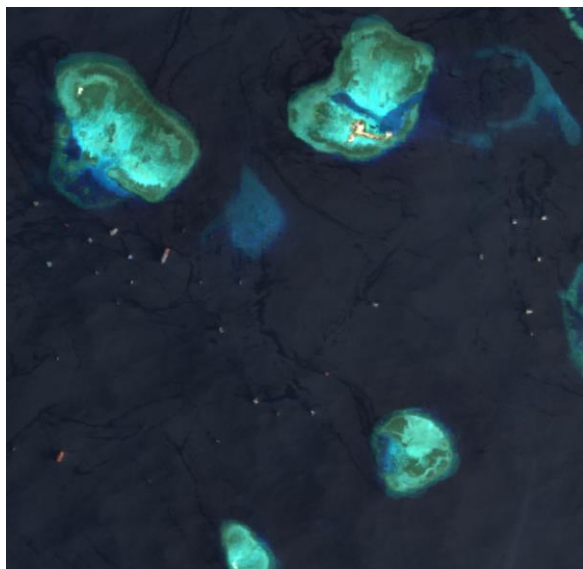
Union Banks – Near Hughes Reef

More than 130 ships left Union Banks
between April 28 and May 13, 2021

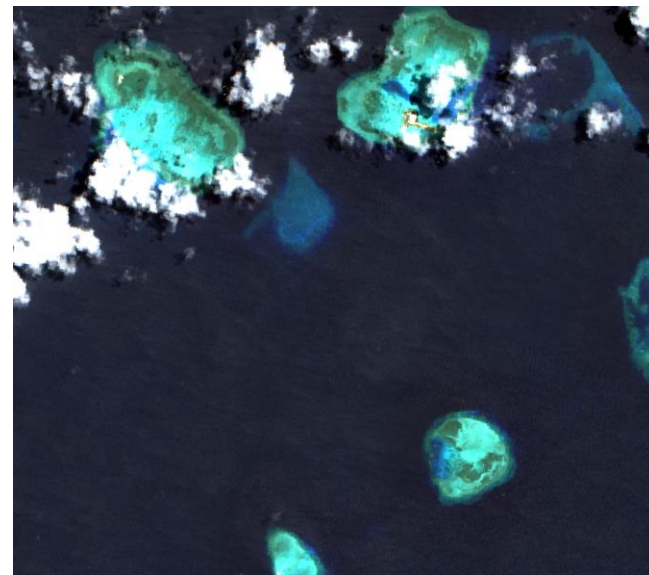
March 4, 2021
Approximately 26 ships



April 28, 2021
Approximately 158 ships



May 13, 2021
0 ships

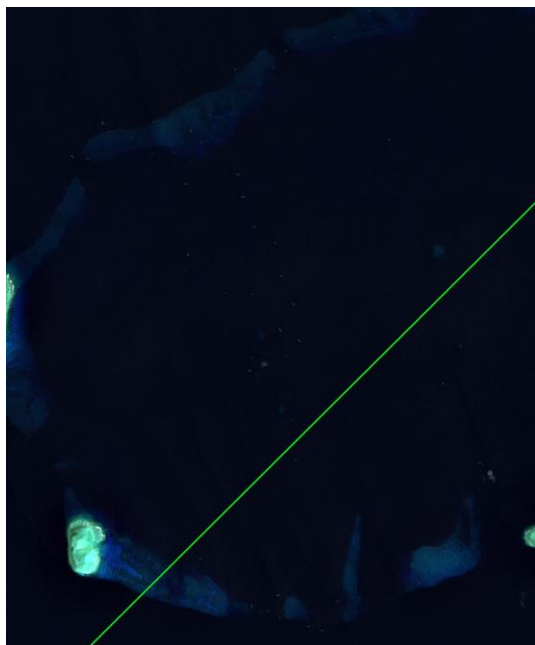


Imagery credit: European Space Agency – produced from ESA remote sensing data

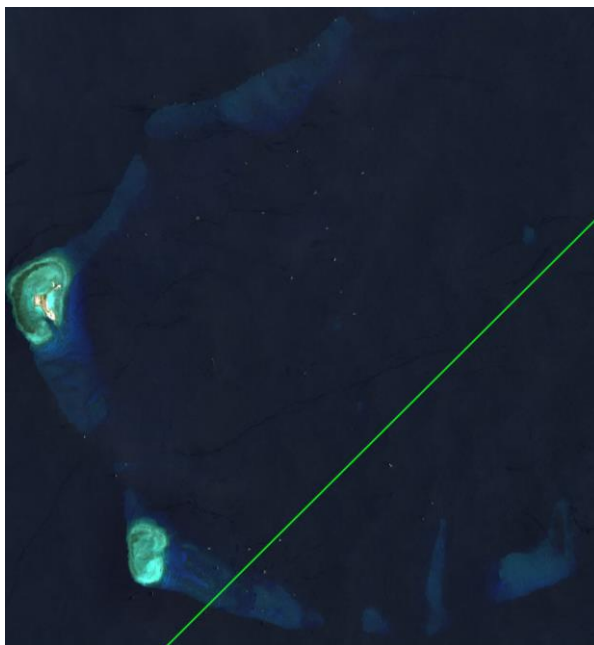
Tizard Bank – Gaven and Gaven South Reefs

Approximately 180 ships arrived
between March 4 and May 18, 2021

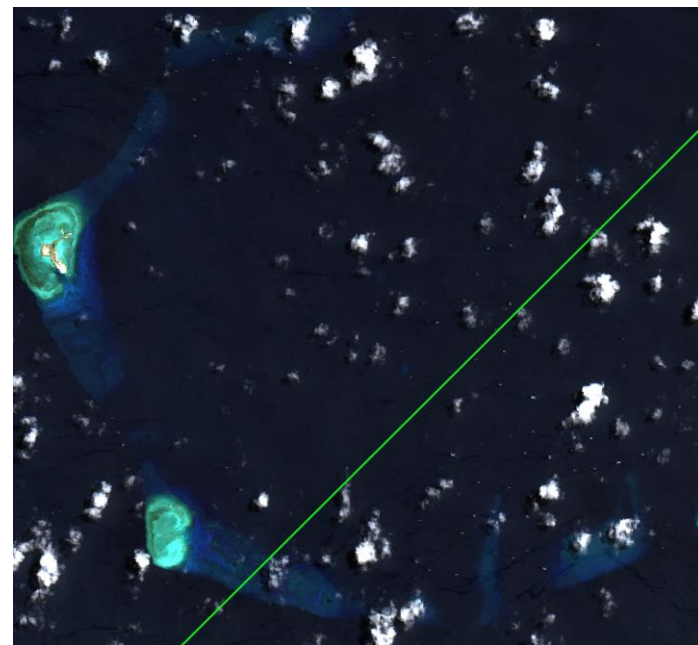
March 4, 2021
Approximately 54 ships



April 28, 2021
Approximately 87 ships



May 18, 2021
Approximately 234 ships

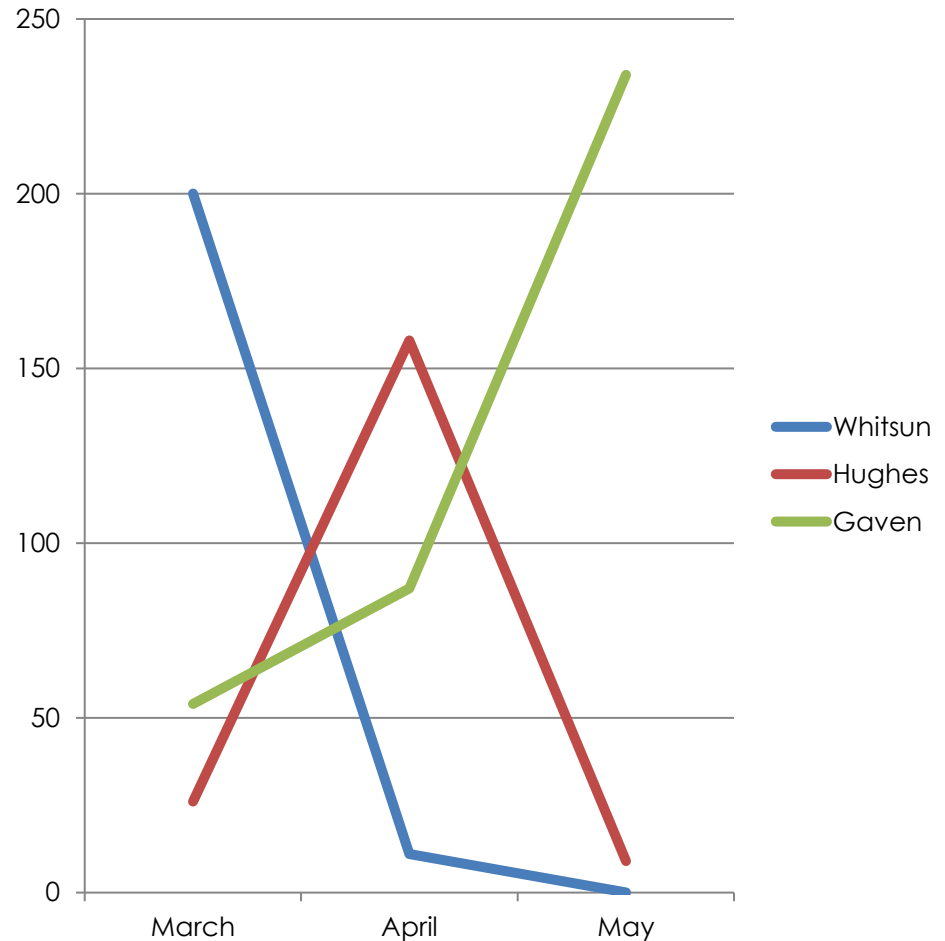


Imagery credit: European Space Agency – produced from ESA remote sensing data

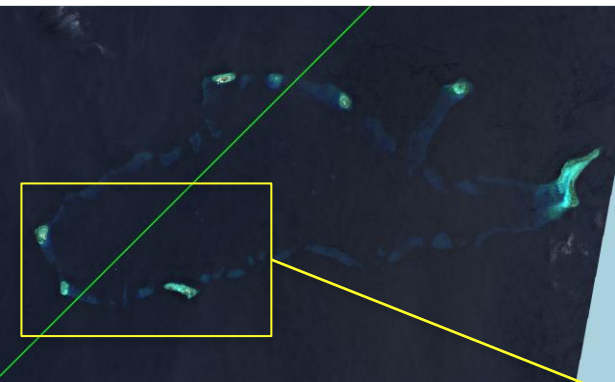
Where Did The Ships From Whitsun Reef Go?

The previous images and the chart below illustrate that the Chinese fishing ships that were at Whitsun Reef in March, moved to Hughes Reef in April, and are now gathered at Gaven Reef.

The following images show the ship count at Gaven Reef for May 18 in detail, while summarizing the number of ships on previous dates at the other location.

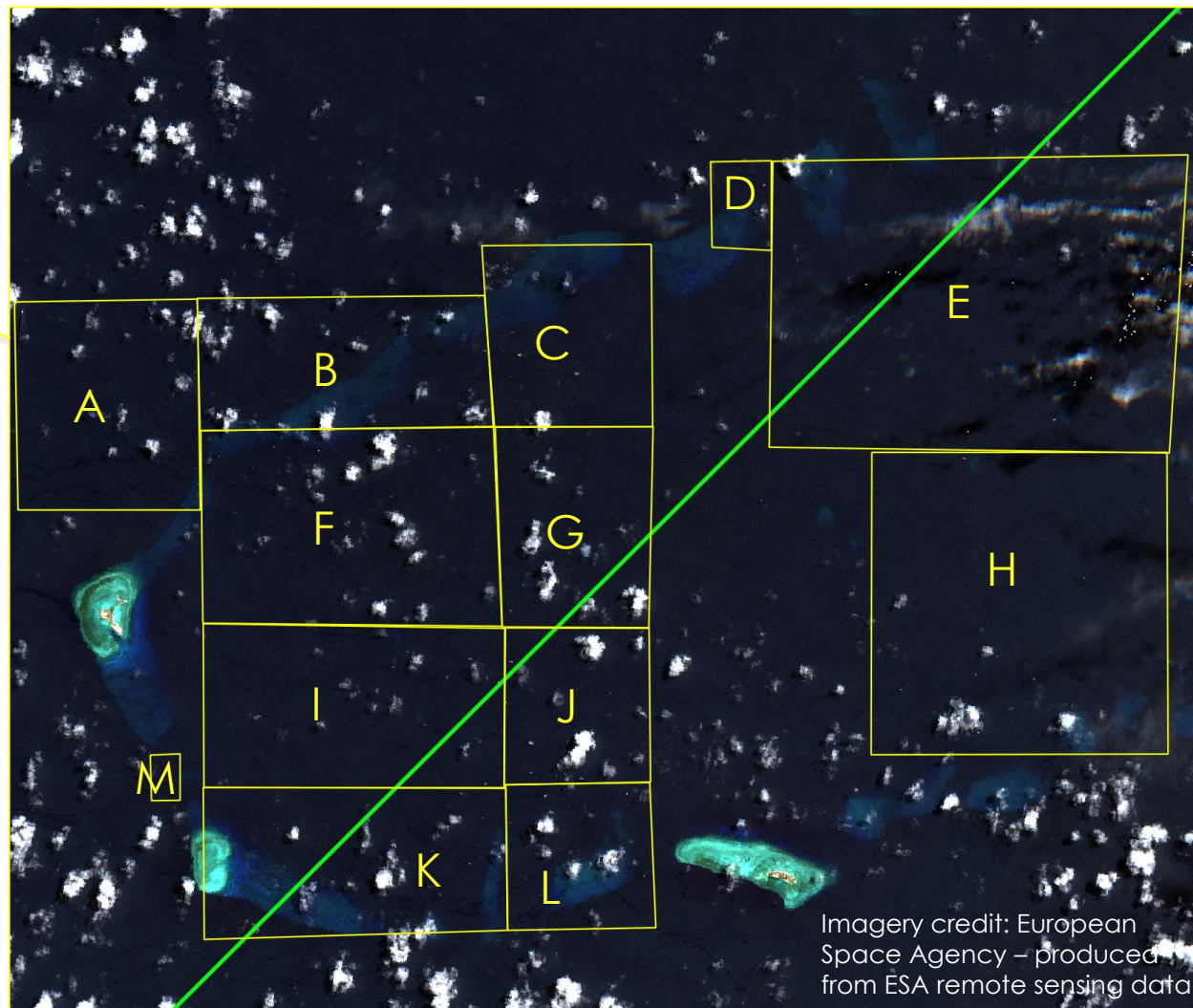


Over 200 Ships In Tizard Bank, May 18, 2021

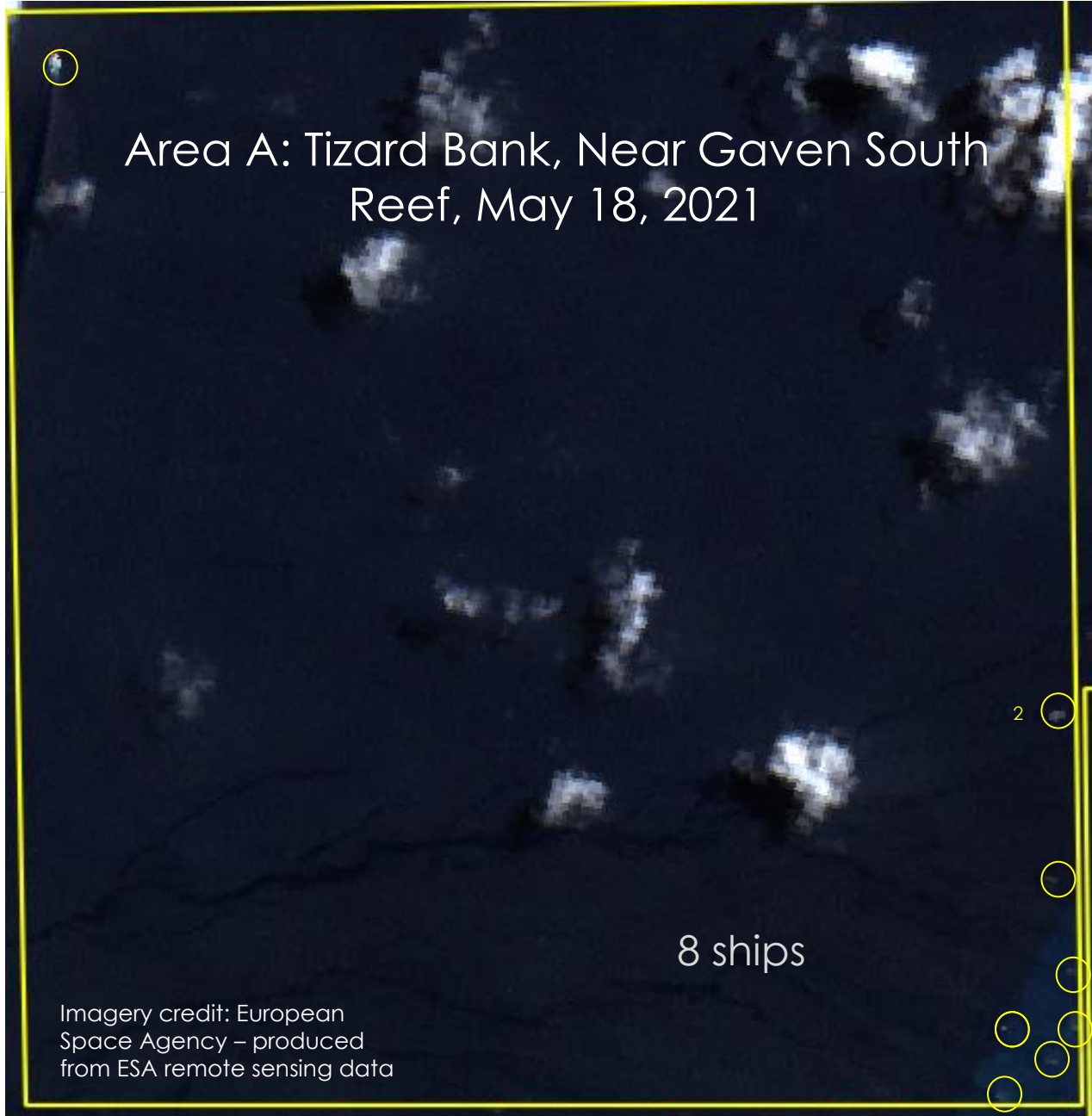


The large number of ships required breaking the area into a grid so that the ships could be more easily counted. The subsequent slides show the ships in each lettered grid area.

In these images, the light green diagonal line represents the boundary of the Philippine Exclusive Economic Zone. Areas to the right of the line are within the Philippine EEZ, while areas to the left are outside of it.



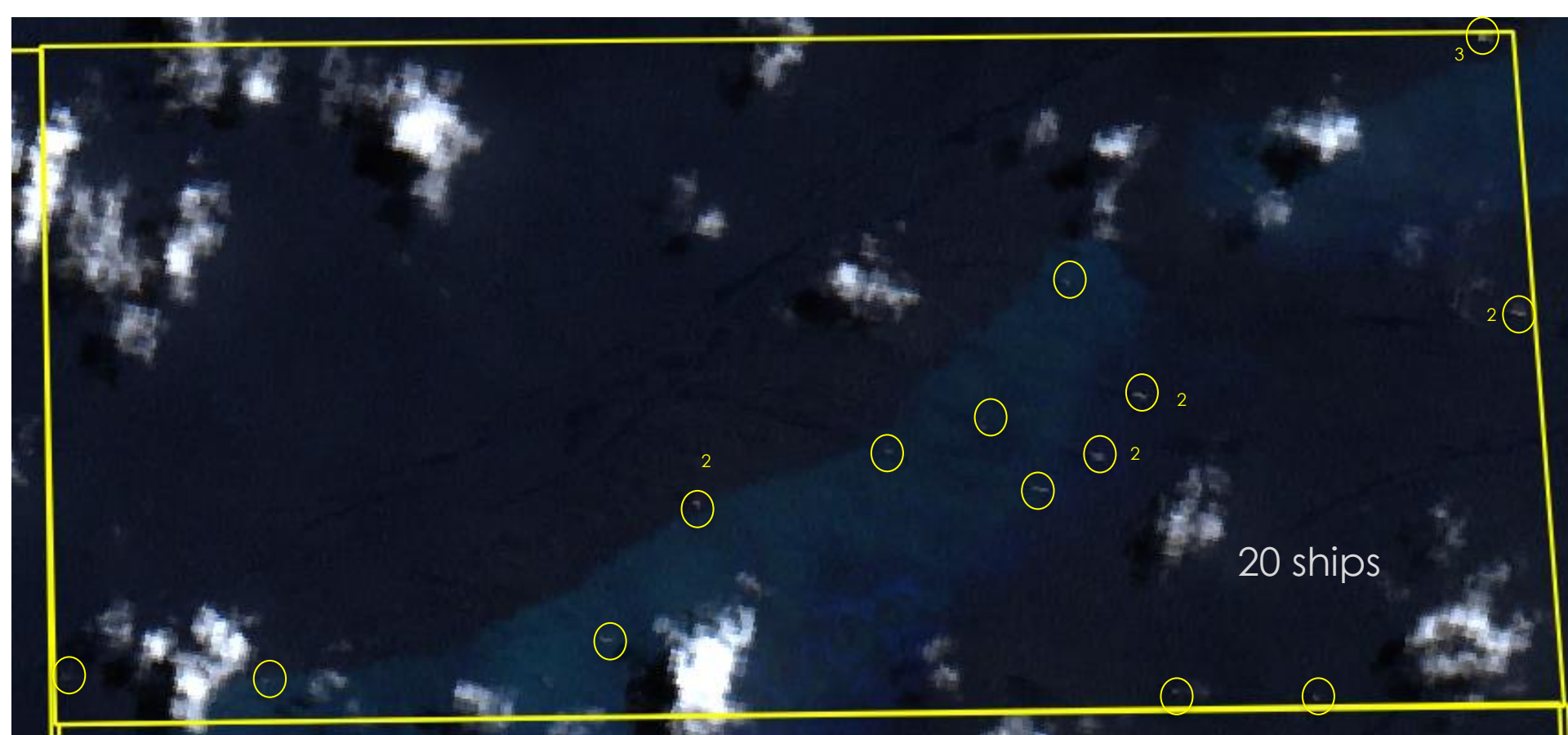
Imagery credit: European Space Agency – produced from ESA remote sensing data



Imagery credit: European Space Agency – produced from ESA remote sensing data

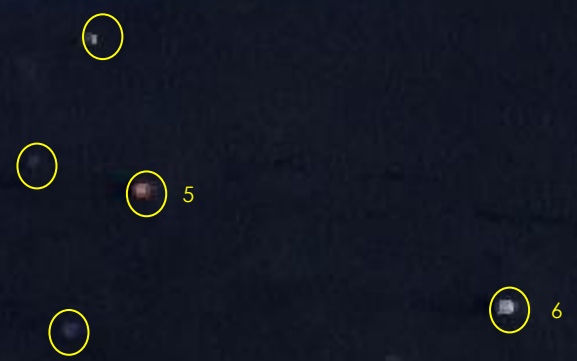
8 ships

2



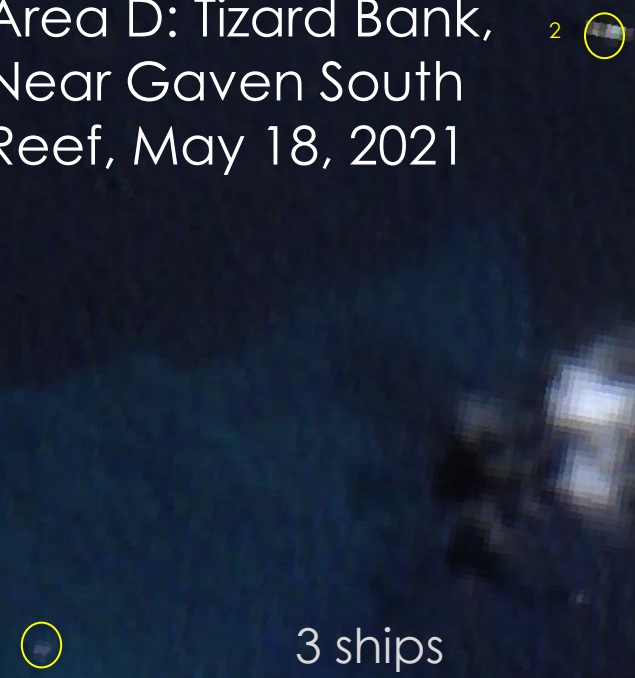
Imagery credit: European Space Agency – produced from ESA remote sensing data

Area C: Tizard Bank, Near Gaven South Reef, May 18, 2021



15 ships

Area D: Tizard Bank, Near Gaven South Reef, May 18, 2021



3 ships

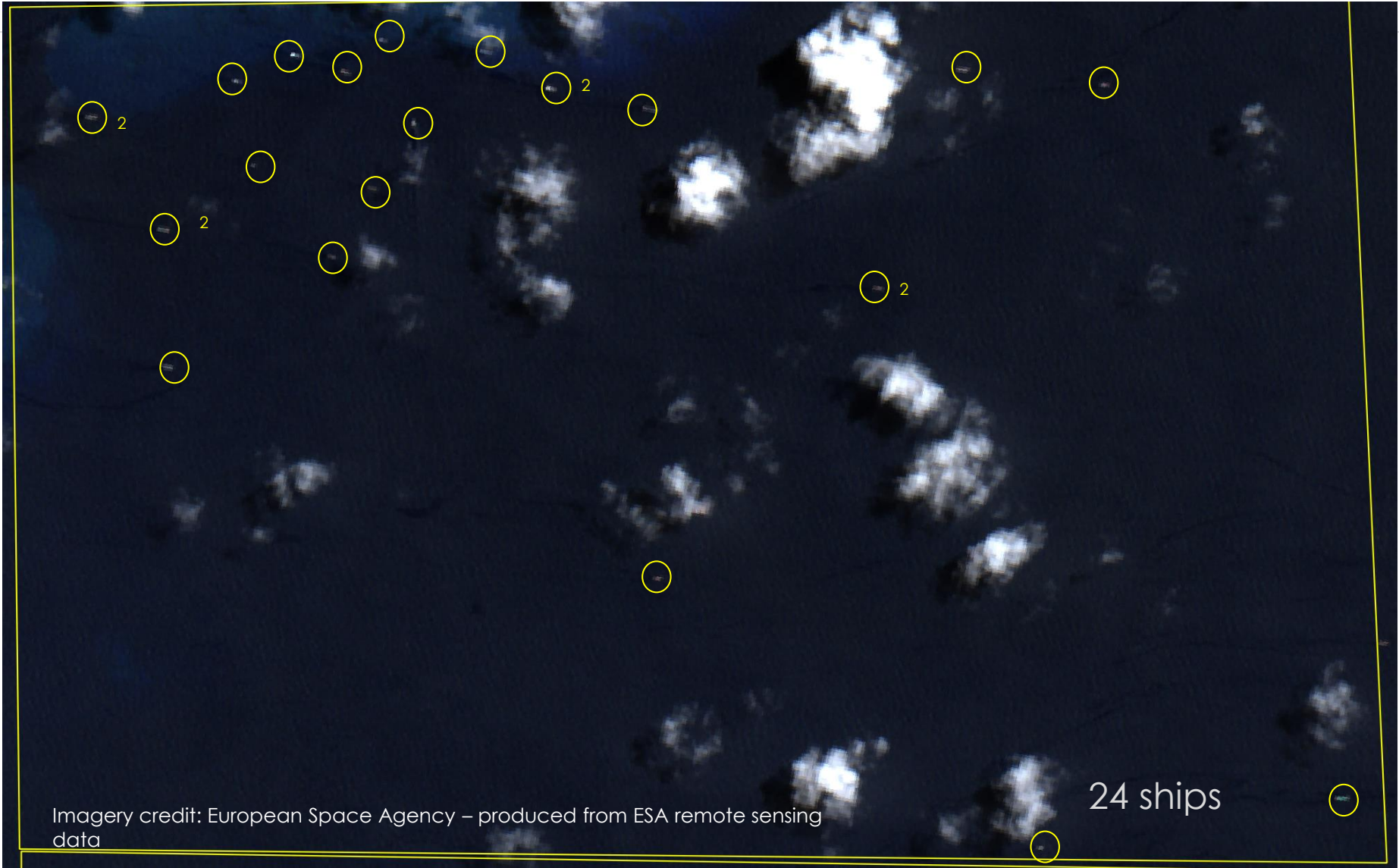
Imagery credit: European Space Agency – produced from ESA remote sensing data

Area E: Tizard Bank,
Near Gaven South Reef,
May 18, 2021

5 ships

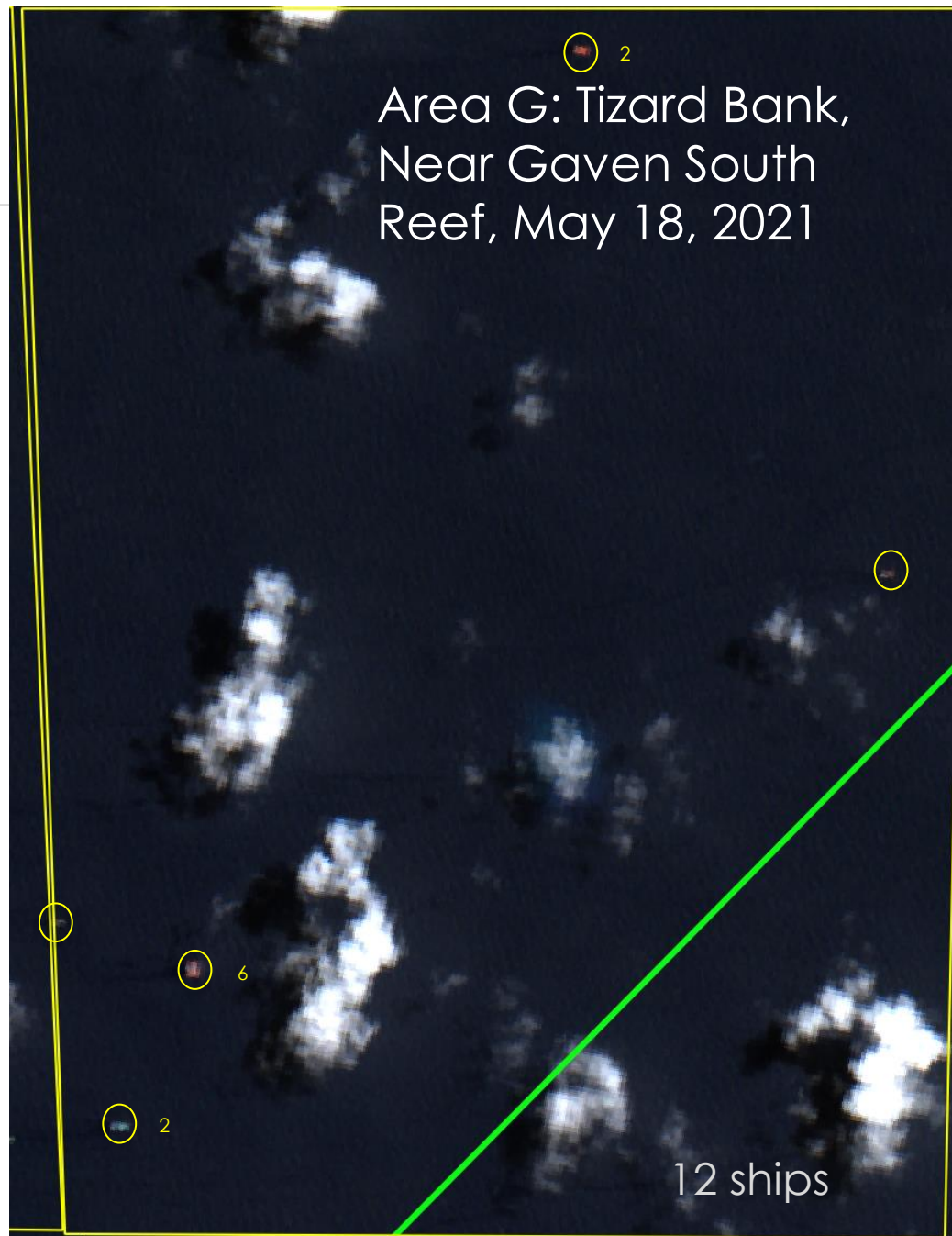
Imagery credit: European Space Agency – produced from ESA remote sensing data

Area F: Tizard Bank, Near Gaven South Reef, May 18, 2021



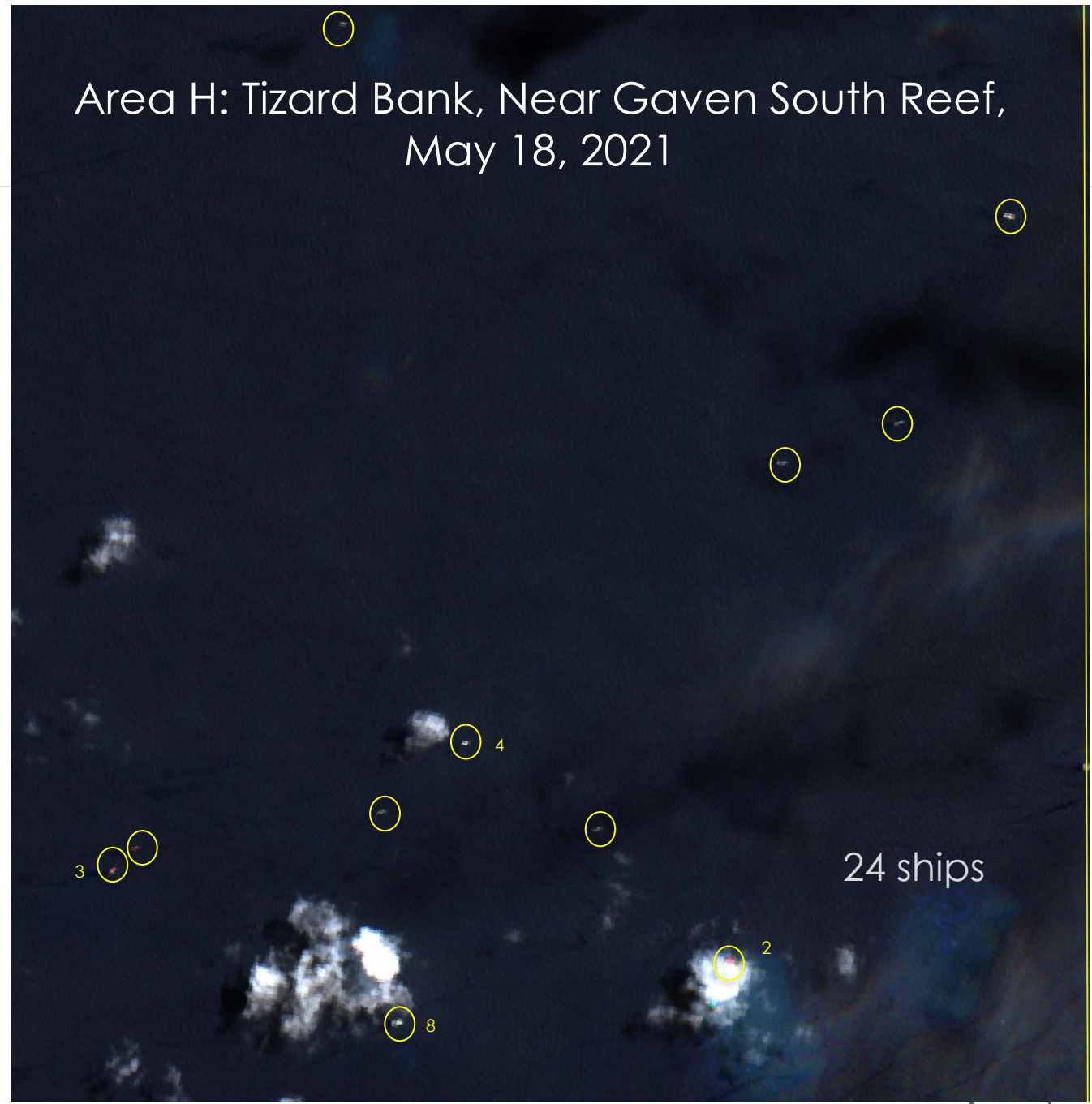
Imagery credit: European Space Agency – produced from ESA remote sensing data

24 ships



Imagery credit:
European Space
Agency – produced
from ESA remote
sensing data

Area H: Tizard Bank, Near Gaven South Reef, May 18, 2021



3

4

5

6

7

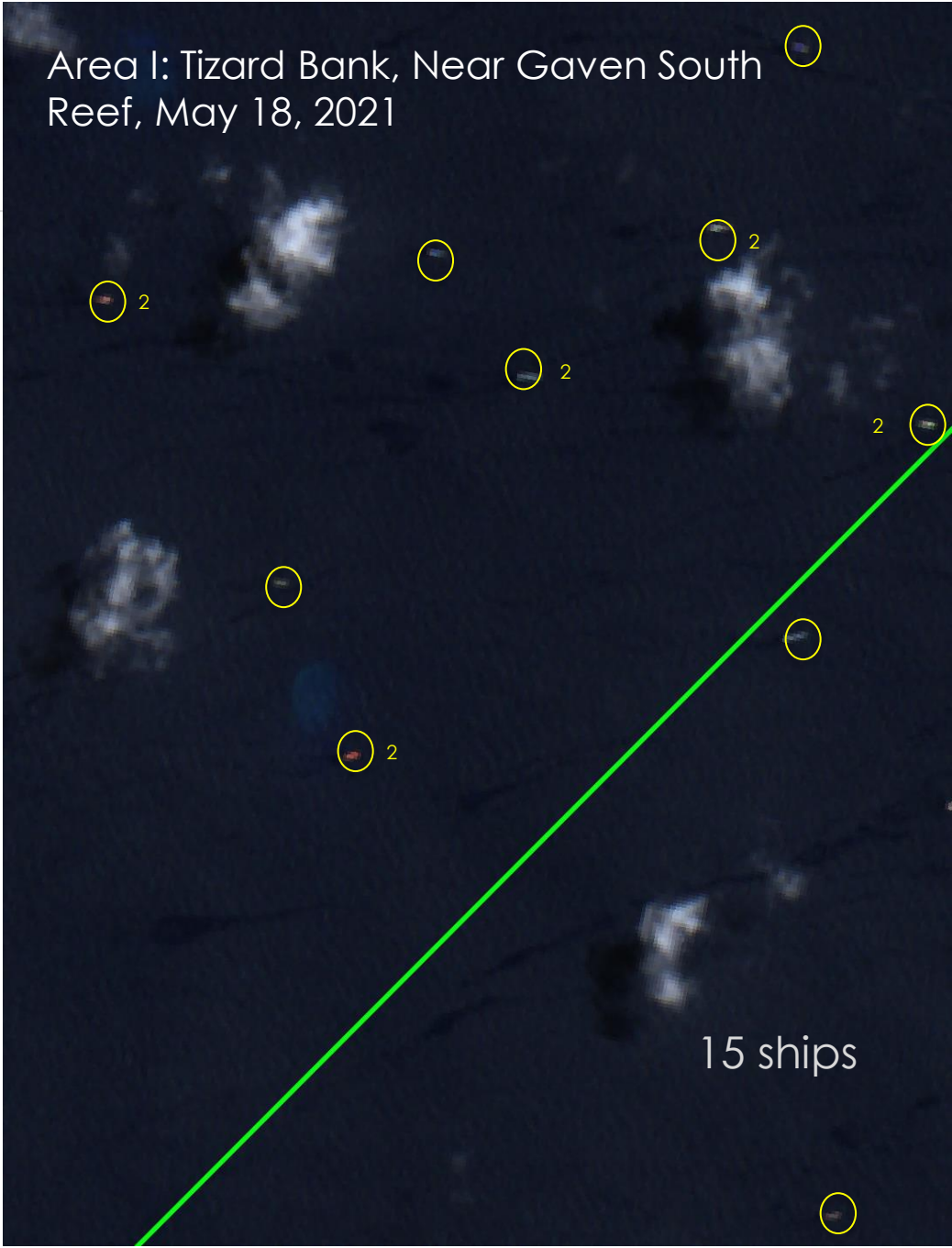
2

8

24 ships

Imagery credit:
European Space
Agency – produced
from ESA remote
sensing data

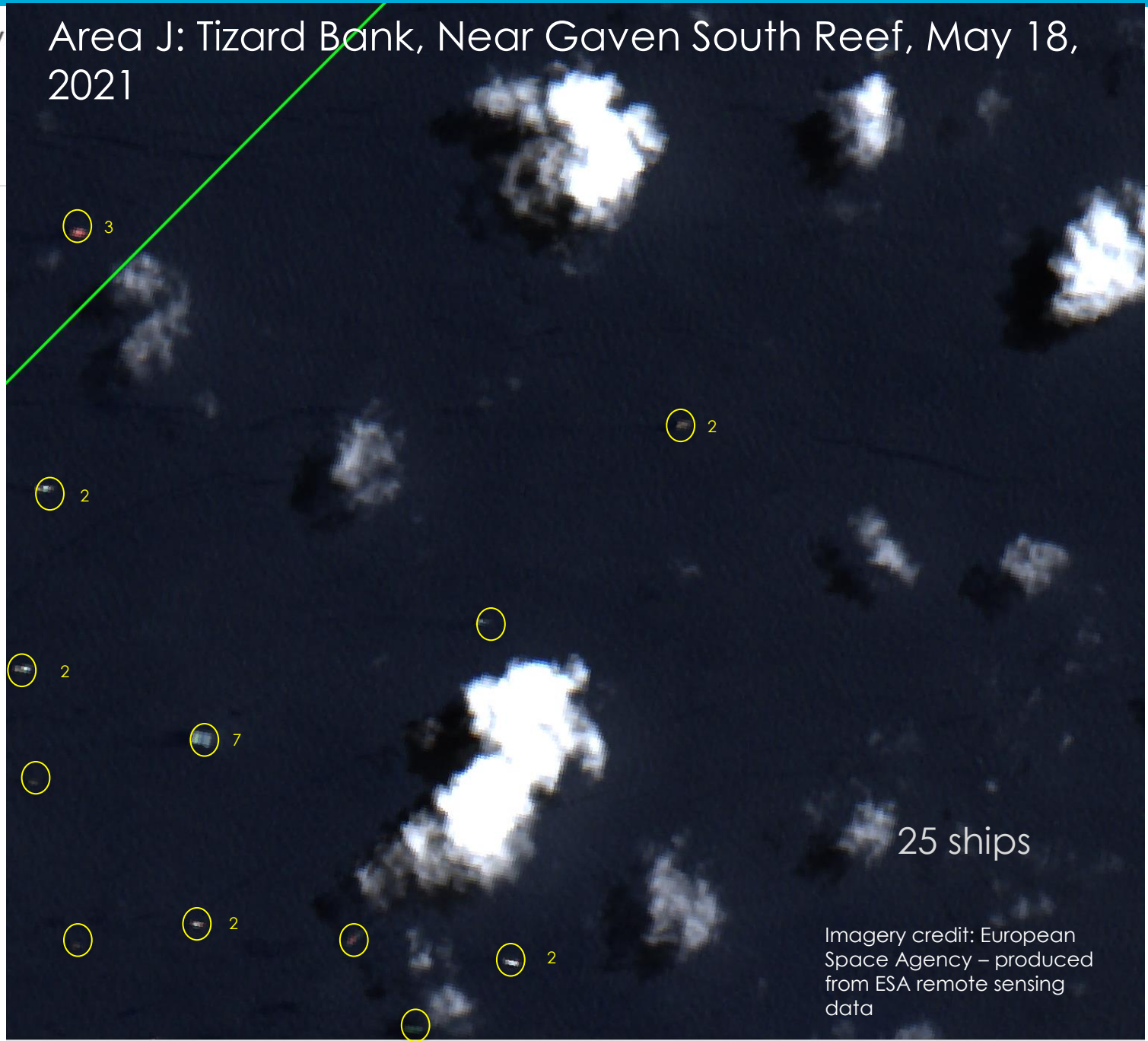
Area I: Tizard Bank, Near Gaven South Reef, May 18, 2021



15 ships

Imagery credit: European Space Agency – produced from ESA remote sensing data

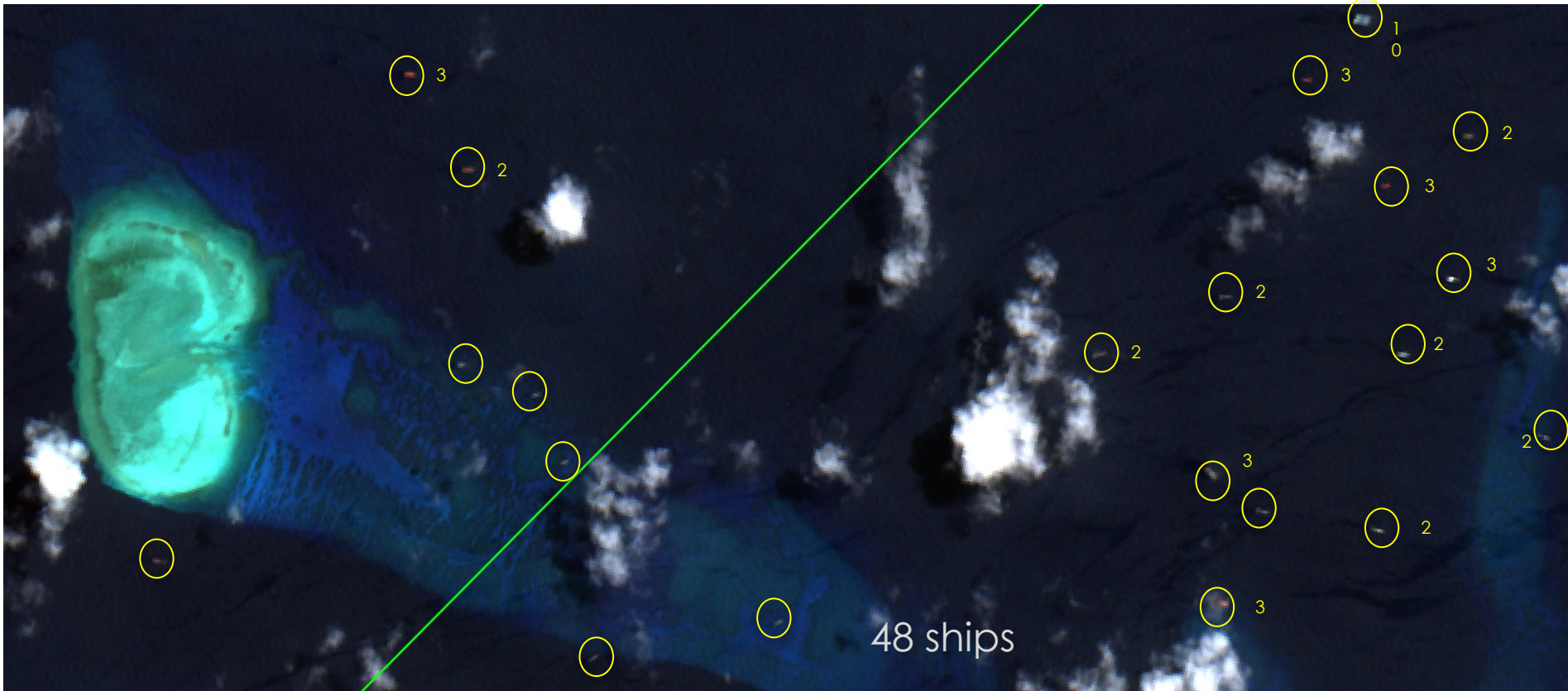
Area J: Tizard Bank, Near Gaven South Reef, May 18, 2021



25 ships

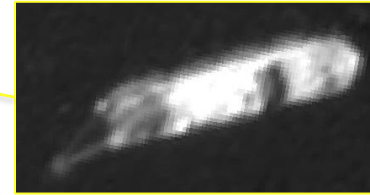
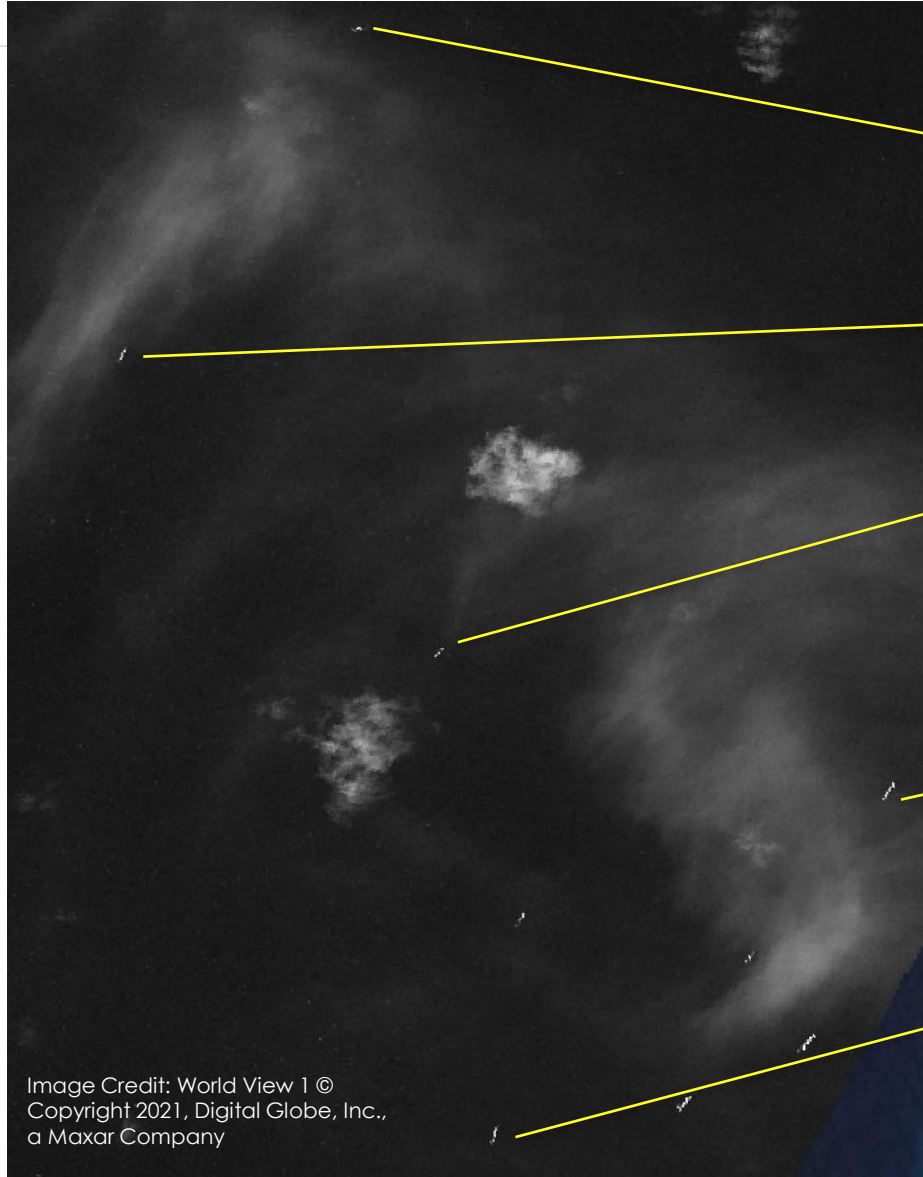
Imagery credit: European Space Agency – produced from ESA remote sensing data

Area K: Tizard Bank, Near Gaven South Reef, May 18, 2021



Imagery credit: European Space Agency – produced from ESA remote sensing data

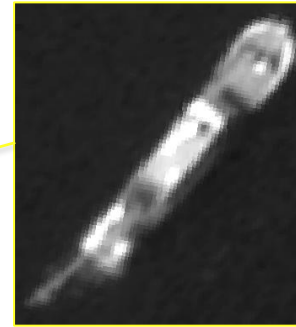
Area K High Resolution Detail: Fishing Ships In Tizard Bank, Near Gaven South Reef, May 10, 2021



10.19998534, 114.28728560



10.19025214, 114.28250431



10.18384133, 114.29247499



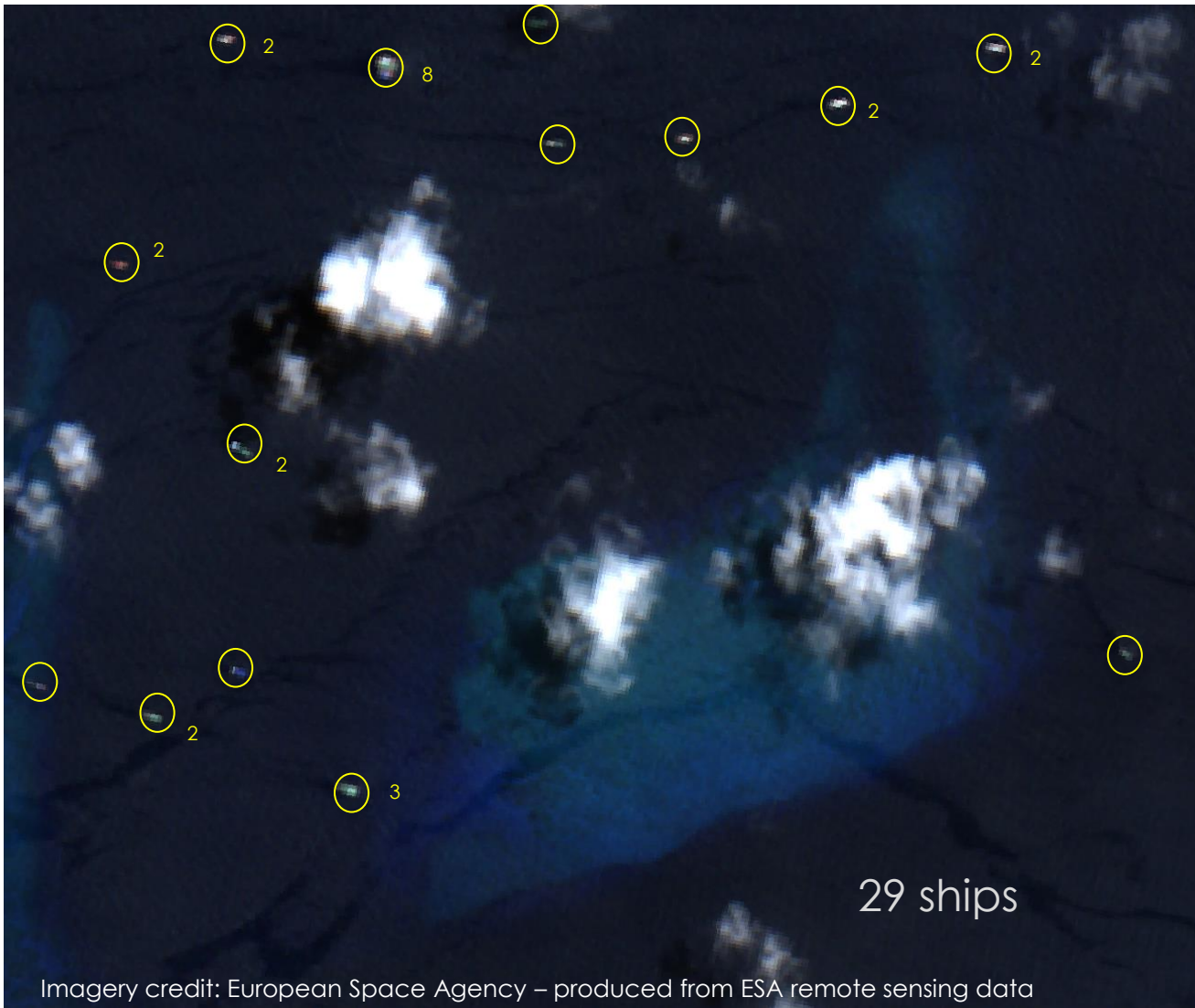
10.18221404, 114.30521862



10.17126009, 114.29626639

Image Credit: World View 1 ©
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Area L: Tizard Bank, Near Gaven South Reef, May 18, 2021



Imagery credit: European Space Agency – produced from ESA remote sensing data

2

Area M: Tizard Bank, Near Gaven South Reef, May 18, 2021



Imagery credit: European Space Agency – produced from ESA remote sensing data

234 Ships In Tizard Bank, Near Gaven South Reef, May 18, 2021

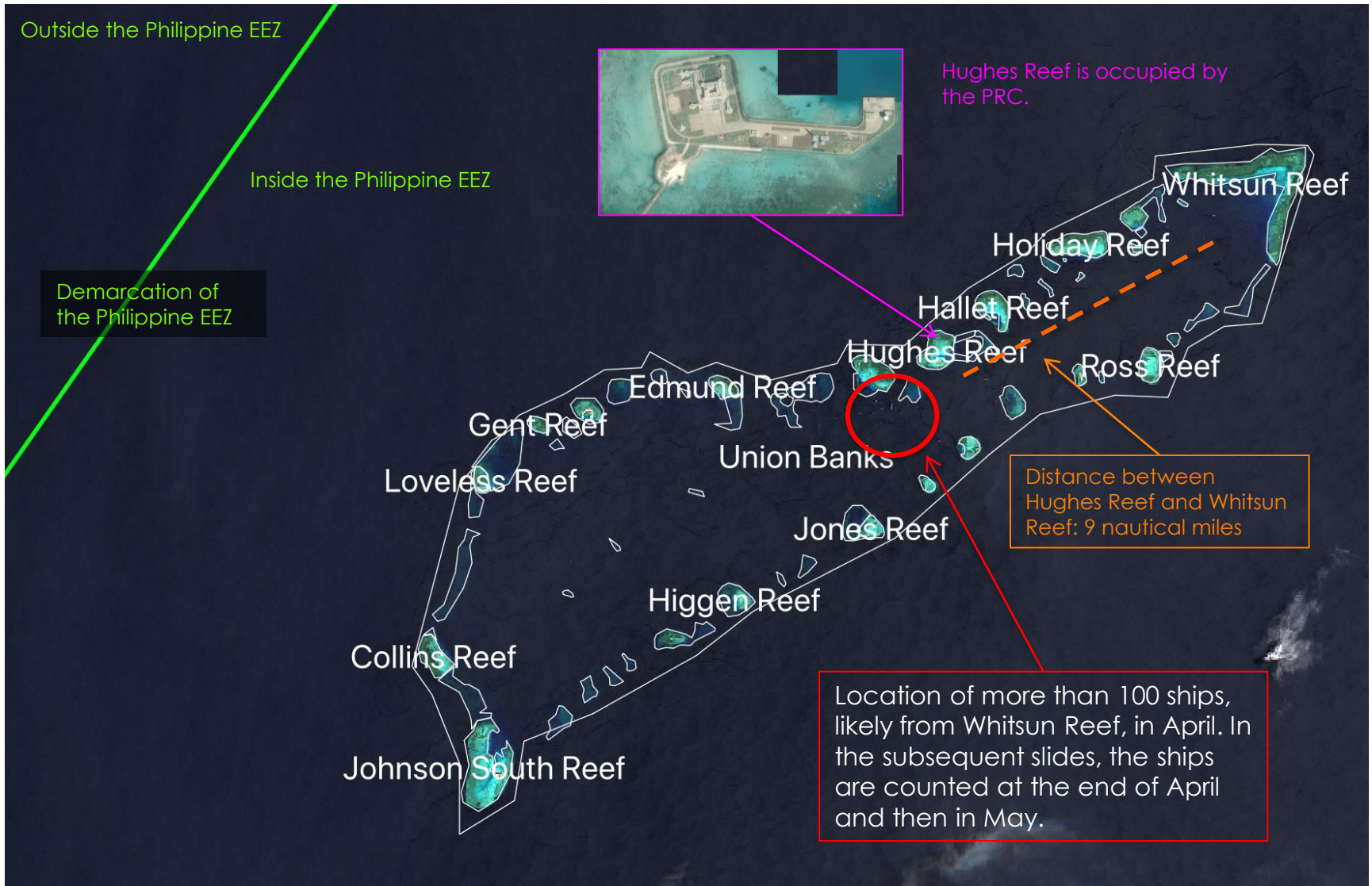
- A – 8
- B – 20
- C – 15
- D – 3
- E – 5
- F – 24
- G – 12
- H – 24
- I – 15
- J – 25
- K – 48
- L – 29
- M – 6

TOTAL SHIPS IN
TIZARD BANK: 234

The date of the ship count is 5/18, but the date of this image is 4/28, with a lack of clouds revealing the beauty of Tizard Bank.

Imagery credit: European Space Agency – produced from ESA remote sensing data

The Union Banks Overview: Entirely Inside The Philippine EEZ



Imagery credit: European Space Agency – produced from ESA remote sensing data

0 Ships At Whitsun Reef, May 13, 2021



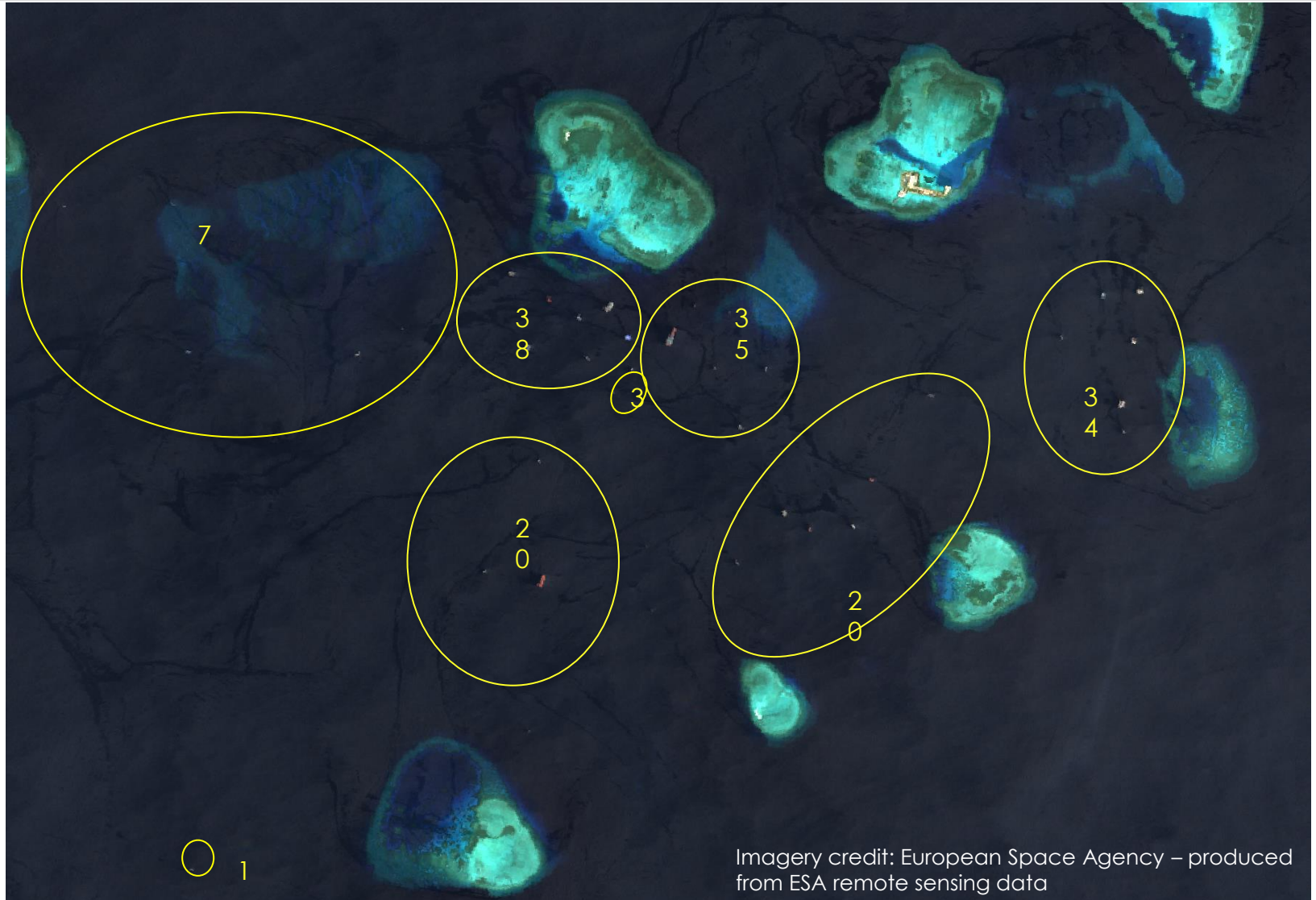
As of May 13, 2021, there were no ships at Whitsun Reef.

In March, there were more than 200 ships moored at Whitsun Reef

It is likely that the majority of those ships remained in Union Banks near Hughes Reef in April, and then left Hughes Reef for Gaven Reef in Tizard Bank in early May.

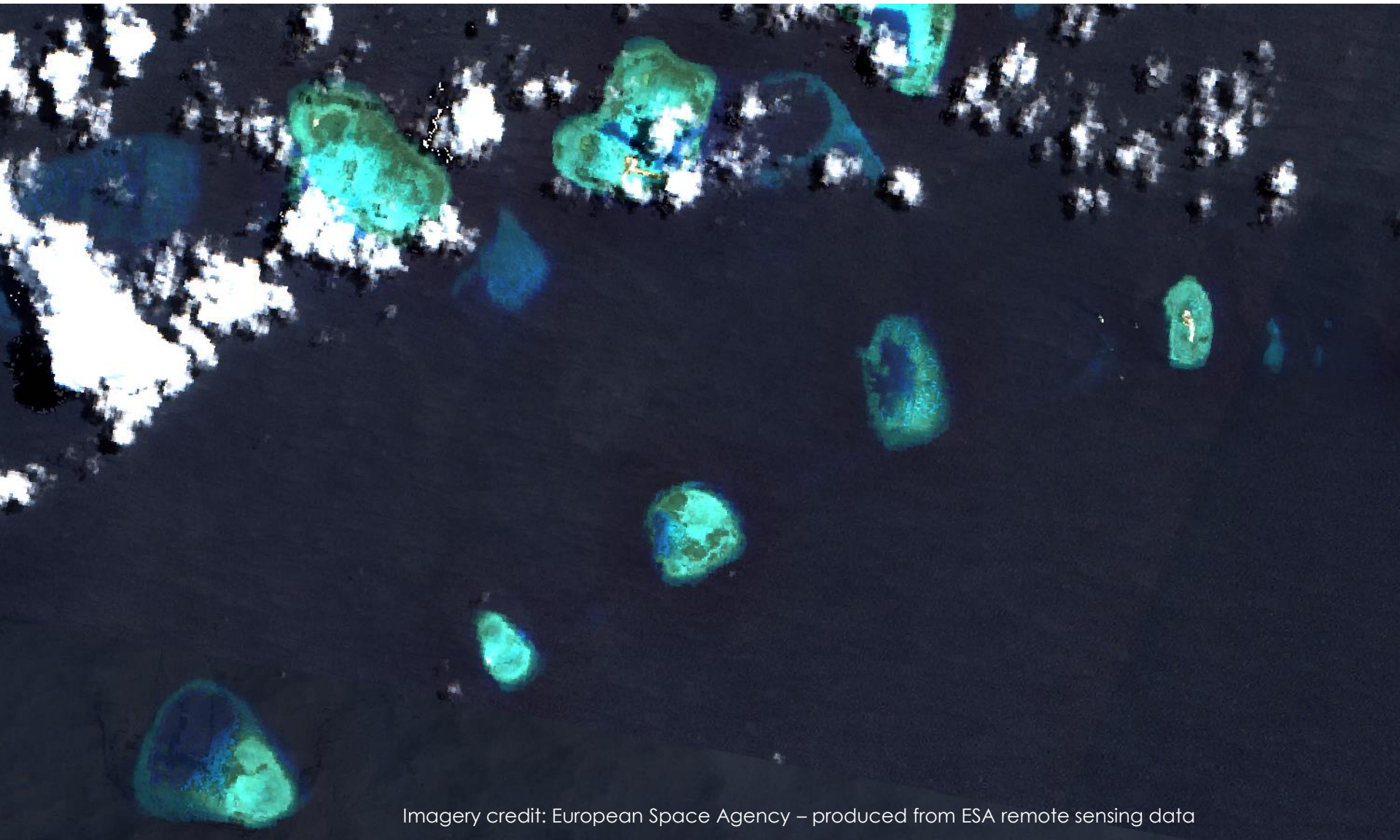
Imagery credit: European Space Agency – produced from ESA remote sensing data

158 Ships In Union Banks, Near Hughes Reef April 28, 2021



Imagery credit: European Space Agency – produced from ESA remote sensing data

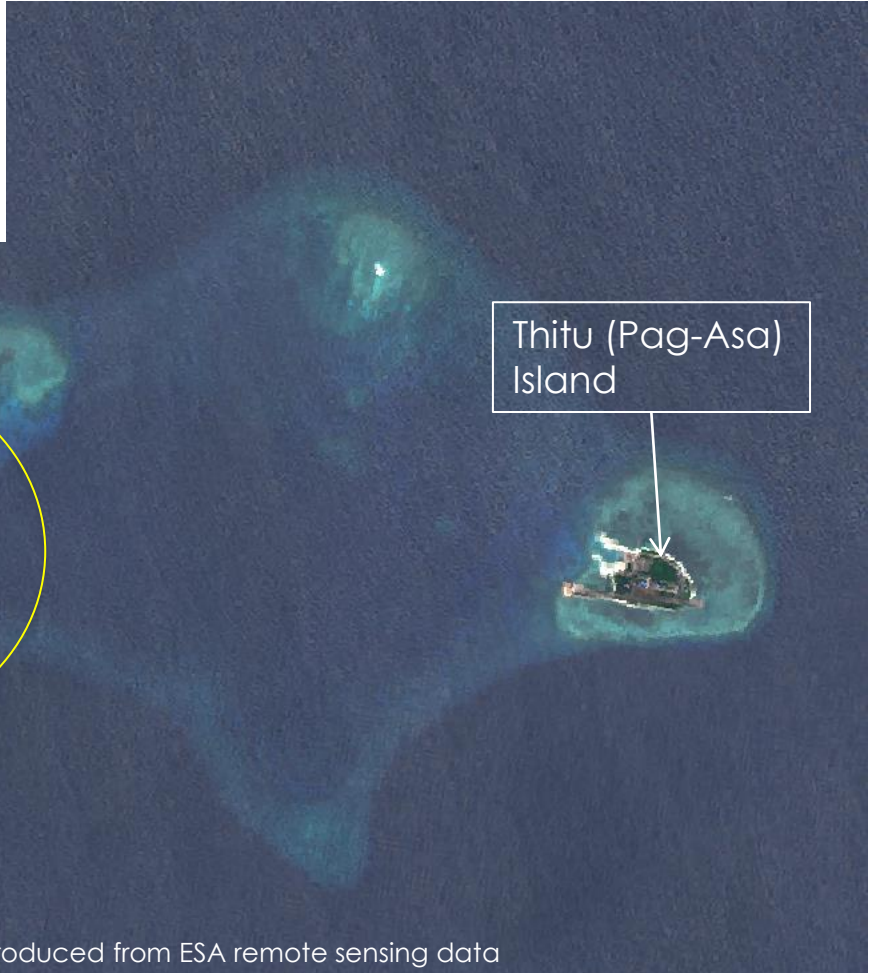
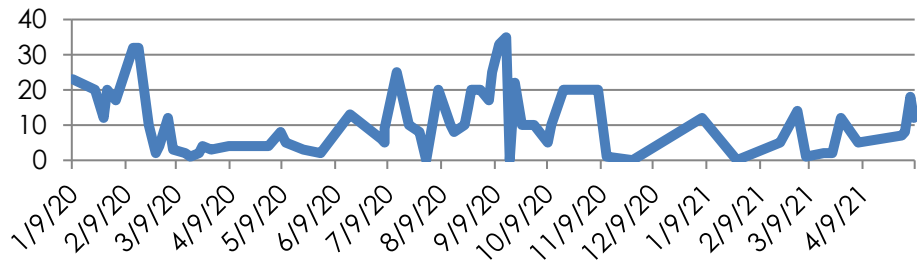
4 Ships In Union Banks, May 13, 2021



Imagery credit: European Space Agency – produced from ESA remote sensing data

18 Ships At Thitu Reef May 16, 2021

Thitu Reef Ship Count



18 Ships At Thitu Reef

Imagery credit: European Space Agency – produced from ESA remote sensing data

Summary

May 13 and 18, 2021

Thitu Reef: 18 ships

Demarcation of the Philippine EEZ

Gaven Reef: 234 ships

Hughes Reef: 9 ships

We counted 261 ships in these areas of the Spratly Islands using images from May 13 and May 18, 2021. The vast majority of these ships strongly resemble the ships that swarmed Whitsun Reef in March.

Assuming some of these ships may be Coast Guard, and a few might not be Chinese, we estimate that there are approximately 250 Chinese fishing ships in these contested areas now.

Whitsun Reef: 0 ships

Similarity's Monitoring Process



This anomaly heat map was generated by AIADS. It is shown overlaid onto a European Space Agency Sentinel 2 image. The anomalies are the red squares. After reviewing the imagery, our analyst then drew the pink polygons around the areas that need further investigation.

High resolution imagery was obtained for these areas, and Allsource Analysis helped interpret what those high resolution images revealed.

Please contact us at info@similarity.com to chat about your monitoring project.

Similarity is a software company that uses AI and Geospatial data to determine when significant changes have happened to an area. Our software, Automated Image Anomaly Detection System (AIADS), enables us to automate the scanning of large areas, such as the South China Sea, for unusual activity.

Our South China Sea monitoring project helps us demonstrate the value of our software. We check for new Sentinel 2 imagery of the South China Sea every week. When new images arrive, they are automatically downloaded and analyzed by AIADS.

A human analyst then reviews the results of the AIADS analysis, an “anomaly heat map” that highlights significant changes in red. By looking at the new image, the anomaly heat map, and historical images, our human analyst determines where there are changes that deserve a closer look. Those are indicated in this report with the red polygons.

Running AIADS on free Sentinel 2 imagery makes it possible for us to inexpensively monitor a very large area.

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