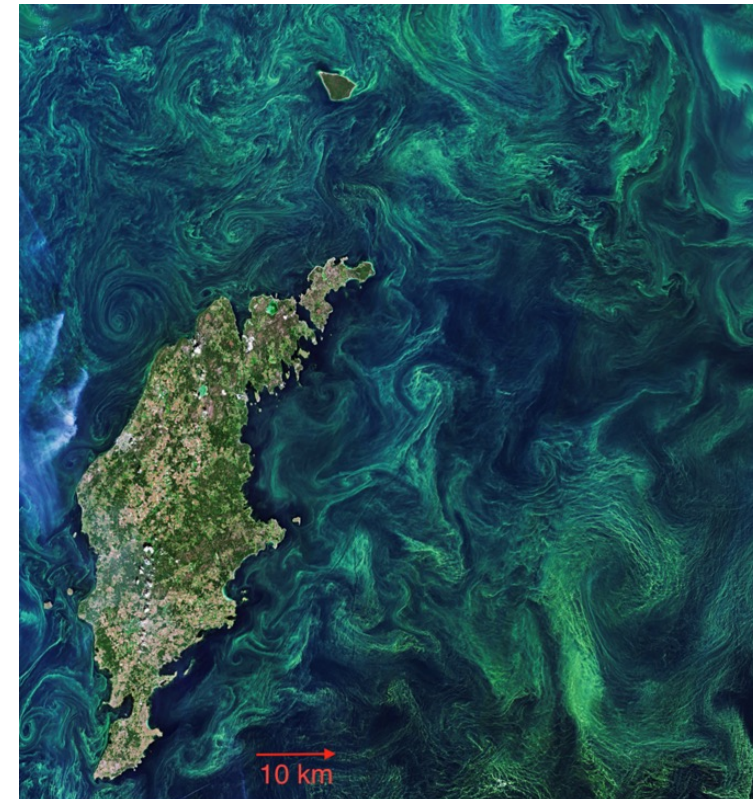
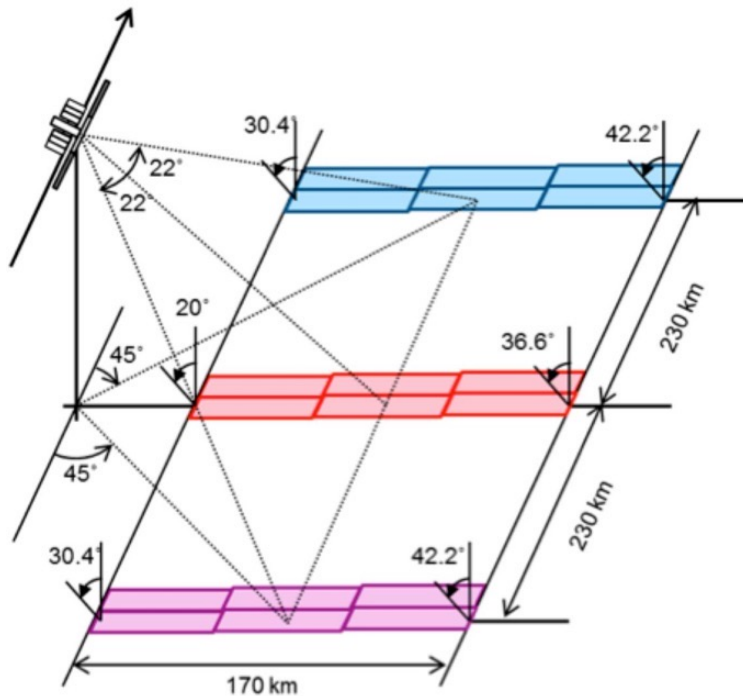




- Intricate patterns in this satellite image of the Baltic Sea are caused by microscopic green algae following ocean currents and winds. Small whirls and filaments like these are seen all over the ocean.
- Ocean models suggest these phenomena play a critical role in the global climate system by impacting horizontal and vertical water movement and exchanges between the ocean, atmosphere, cryosphere and land (e.g. heat, carbon dioxide, ice, marine debris, pollutants).
- Difficult to measure with ships and traditional instruments, the lack of data means little is known about the geographical distribution, strength, variability and evolution of these important structures.

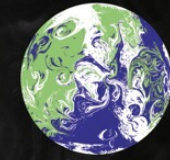




- With support from CEOI and UKSA, the National Oceanography Centre is developing a mission named SEASTAR to measure currents and winds from space with unprecedented accuracy and resolution.
- The SEASTAR instrument is a new type of radar imager that senses the motion of the ocean surface in three directions from Doppler frequency shifts.
- This unique design developed in partnership with Airbus makes it possible to measure current speed, current direction, wind speed and wind direction simultaneously, from space, for the first time.

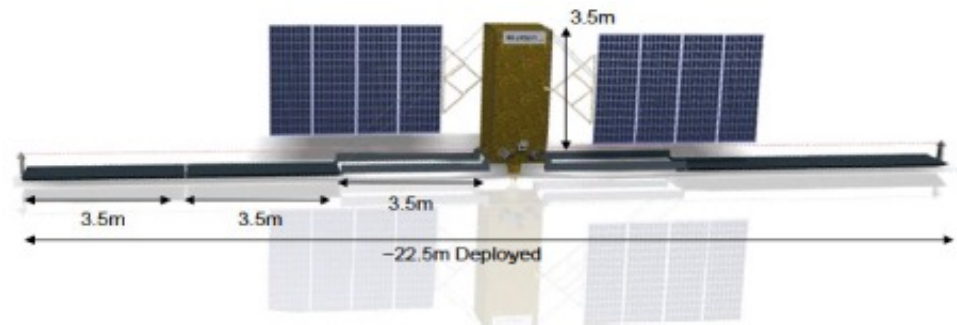
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# Ocean Currents, Wind & Waves: SEASTAR



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- SEASTAR has been selected by the European Space Agency as one of four candidate missions to enter preliminary study for Earth Explorer 11. The concept will now undergo further scientific and technological studies to assess feasibility and cost.
- SEASTAR will measure ocean surface current and surface wind strength and direction at 1 km resolution for all the coastal ocean, shelf seas and marginal ice zone.
- If successful in the ESA competition, SEASTAR will be launched in the 2031-32 timeframe.



More information



Centre for  
EO Instrumentation



AIRBUS

[www.space4climate.com](http://www.space4climate.com)