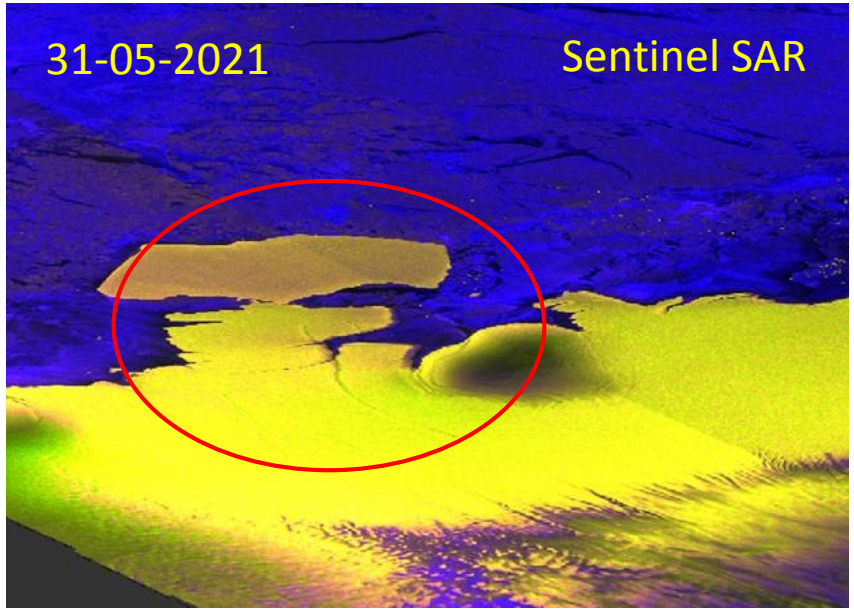
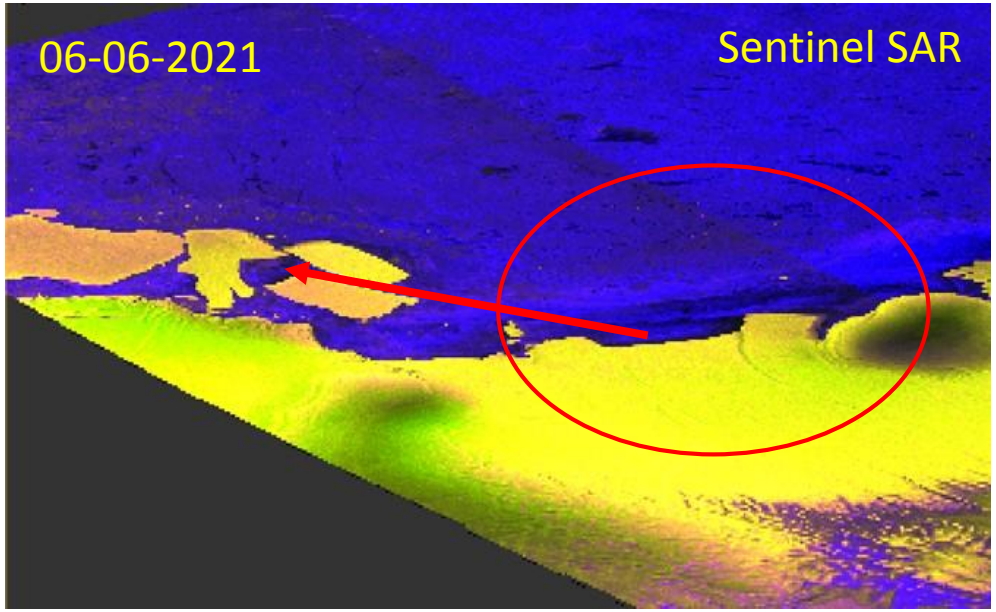
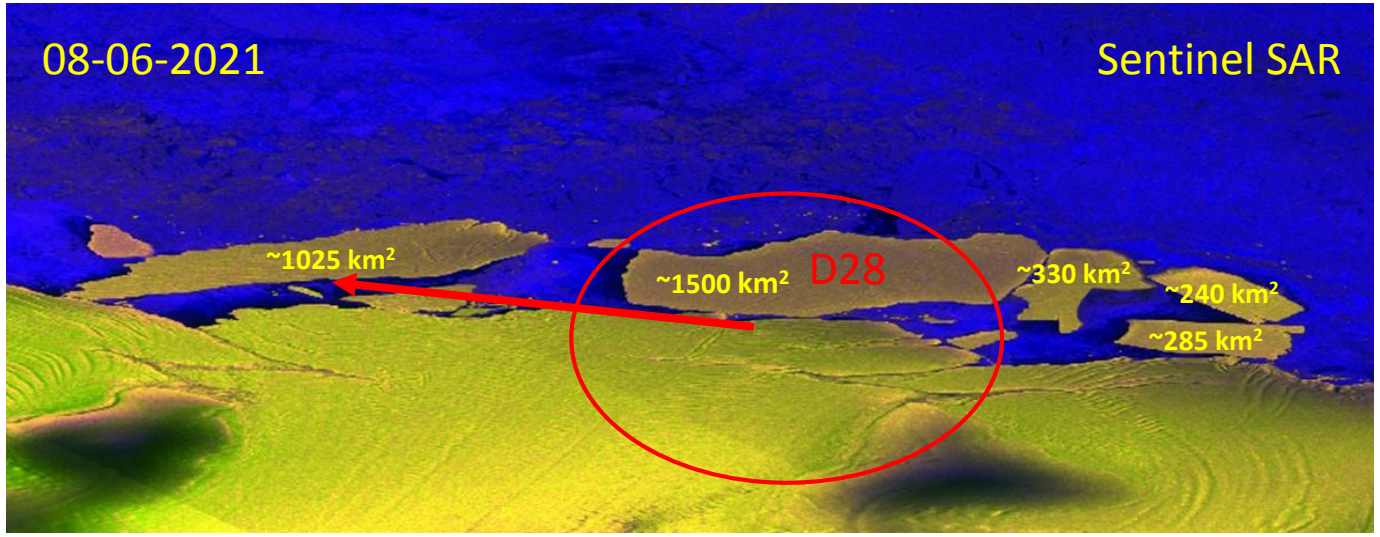
Catastrophic Calving Events due to Collision of D28





Ice Calving is an usual phenomena in the Antarctic and the Arctic ice margins, where the protruding ice shelf and glacier tongues break off or calve into icebergs. This can be attributed to various reasons such as ocean swells and currents, basal melting, coastal cyclones and blizzard, rise in atmospheric temperature, earthquakes and earthquake induced Tsunami. Ice Calving will not drastically increase the sea level, but will increase the ice loss from the land ice which in turn raises the sea level to some extent. Icebergs will make hindrance to ship voyage. Presence of icebergs in polar ocean reduces the surface temperature and salinity of the polar ocean within a buffer zone from the icebergs.



A recent calving reported in the Princess Ragnhild coast between 1st and 2nd June, 2021 due to the collision of the iceberg D28, Calved from Amery in 2019 September and travelling approximately a distance of ~ 2500 km. The last 500 km has travelled in a month's time. The collision impact, blizzard and cyclonic storms induced ocean waves may be responsible for further calving in the Lazrev shelf in the Princess Astrid Coast between 5th and 6th June, 2021. Both are protruding ice shelves / glacier tongues. A train of icebergs is continuing its journey in Princess Astrid Coast which may impact further loss of land ice from Lazrev ice shelf ~ 150 km away from India Bay and increase the number of ice bergs in Antarctic coastal region between Princess Ragnhild coast and Princess Astrid Coast. This may impact some of the decanting operations in India Bay next year unless all the icebergs moved further. The exact date at which ice calving happens is difficult to find due to the unavailability of high resolution SAR satellite data for monitoring. D28 will smoothen the ice margins and will be the reason for redrawing the Antarctic ice margins. Icebergs have two major impacts on climate. Iceberg production affects the mass balance of the parent ice sheet and melting icebergs influence both ocean structure and global mean sea level.

Data Source: (https://scihub.copernicus.eu/dhus/data)