SOUTHERN LAUNCH


# VS02/03

MISSION OVERVIEW | DECEMBER 2022

# LAUNCH DETAILS

## LAUNCH COMPLEX
**Whalers Way Orbital Launch Complex**
Sleaford, South Australia

## LAUNCH WINDOW
Opens December 14

## DAILY LAUNCH OPPORTUNITY
08:00 - 18:30

## LAUNCH VEHICLE
ATSpace Kestrel I rocket

## VS03 PAYLOAD
Inovor spacecraft + Asension payload
Southern Launch payload

## CUSTOMER
ATSpace, Asension & Inovor

# MISSION OVERVIEW

The VS02/03 missions will be the second and third launch attempts from the Whalers Way Orbital Launch Complex.

These missions are a part of the ECO Test campaign which aims to collect rocket launch noise data to inform the planned future operation of the Whalers Way Orbital Launch Complex.

The VS02/03 missions will also test the Kestrel I rocket design on a sub-orbital trajectory, an important step towards future orbital missions for the launch vehicle.

*The ECO Test mission patch designed by Aboriginal artist David Weetra*

The VS02/03 missions will see a Kestrel I rocket launched to space from the Whalers Way Orbital Launch Complex.

The 'Kestrel I' launch vehicle is a 10 metre, two stage, sub-orbital rocket. On both the VS02 and VS03 missions the rocket will reach an altitude of over 200 kilometres above Earth. The trajectory of the launch will be over the Southern Ocean with the total time of flight for both missions approximately 10 minutes.

The VS03 mission signals a major step forward for sovereign space capabilities. The VS03 mission will see four South Australian companies launch a rocket and state-of-the-art payloads to space from South Australia.

Southern Launch, ATSpace, Asension and Inovor Technologies have collaborated on the mission which will see an ATSpace 'Kestrel I' rocket launched from the Whalers Way Orbital Launch Complex. On board the rocket will be an Inovor Technologies spacecraft integrated with payloads designed by Asension and Southern Launch.

During the time in flight, Southern Launch, Asension and Inovor Technologies will monitor their payload and test communication protocols. For Southern Launch and ATSpace, it will be another opportunity to gain further flight heritage for the 'Kestrel I' launch vehicle in preparation for future orbital launch attempts.

The VS02 and VS03 missions are another exciting step forward for the Australian space industry.

## KESTREL I ROCKET

**Dimensions**
Diameter - 1.46m
Length - 10.2m

**Weight**
Takeoff gross weight - 3036kg
Max payload mass - 150kg

**Thrust**
Takeoff thrust - 7,920 kgf

**Altitude**
Max launch altitude - 350km

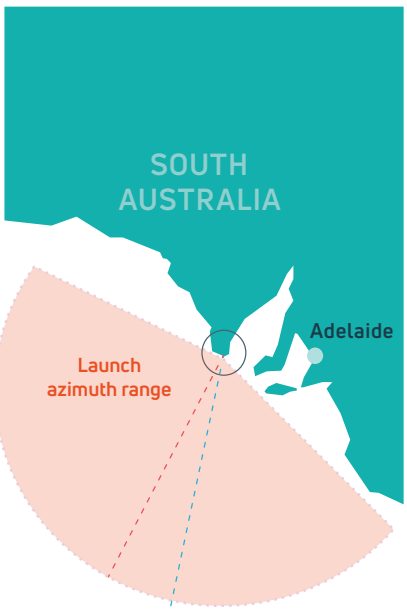
**Total impulse**
Stage 1 - 419.36 (t-sec)
Stage 2 - 136.51 (t-sec)

# COMMUNITY INFORMATION

## WHALERS WAY ORBITAL LAUNCH COMPLEX

The Whalers Way Orbital Launch Complex is located is located on the tip of the Eyre Peninsula in South Australia.

The Whalers Way Orbital Launch Complex is one of the only spaceports in the world that offers unhindered launch trajectories across unpopulated areas into high-inclination orbits.





## PUBLIC VIEWING

Please note there is no official viewing area for the general public during the VS02/03 campaigns.

The best public viewpoint for the launch will be from the Wanna Lookout in Lincoln National Park. The lookout is located across the bay from the Whalers Way Orbital Launch Complex.

For more information on how to access Wanna Lookout, visit the National Parks and Wildlife Service website.

Members of the public are not permitted to enter the Whalers Way Orbital Launch Complex at any point during launch operations.

## LAUNCH EXCLUSION AREAS

Safety is a top priority for Southern Launch.

During the ECO TEST VS02 and VS03 launches, the following exclusion areas will be in place to ensure public safety. Fishery Bay is not included in any launch exclusion areas.

The launches will take place on two separate days. Launch exclusion areas will be in place on each planned launch day. Exclusion areas will be revoked as soon as possible to minimise disruption to the public.

### GROUND EXCLUSION AREA

An exclusion area will be established around Southern Launch's Whalers Way Orbital Launch Complex. The exclusion area does not extend beyond the private land used by Southern Launch for launch activities.

### AIRSPACE RESTRICTIONS

Southern Launch works with the Civil Aviation Safety Authority (CASA) to establish a Temporary Restricted Area (TRA) that will be in place during the launch campaign. The TRA applies to aircraft and drone users of the airspace. Detailed information about the TRA will be published through Airservices Australia.

## MARINE EXCLUSION AREAS

Southern Launch has worked with the Government of South Australia to establish an Aquatic Activity Licence that temporarily restricts access to the coastal waters around the launch complex on any planned day of launch. This will be in place for the minimum amount of time possible whilst maintaining public safety. Downrange maritime risk over the Southern Ocean will be bounded by a Notice to Mariners published by the Australian Hydrographic Office.


*View of the Aquatic Activity License Exclusion Area marked in orange and land exclusion area marked in red.*


*Wide view of the Aquatic Activity Licence Exclusion Area marked in orange and land exclusion area marked in red.*

| Label | Latitude | Longitude |
|---|---|---|
| AAL W Pt 1 | -34.8908 | 135.6034 |
| AAL W Pt 2 | -34.9377 | 135.5591 |
| AAL E Pt 1 | -34.9234 | 135.6883 |
| AAL E Pt 2 | -34.9417 | 135.7229 |
| AAL E Pt 3 | -35.0000 | 135.7519 |
| AAL S Pt | -35.0000 | 135.5626 |

*Table of GPS coordinates for the boundaries of the Aquatic Activity License Exclusion Area.*

# SOUTHERN LAUNCH

**Southern Launch is a launch service provider, headquartered in Adelaide, South Australia. Our offering includes the Southern Launch Orbital Launch Complex, and the Koonibba Test Range, our suborbital testing facility.**

## Launch

As the evolution of technology continues, launch performs the key role in sending satellites into space. Without space launch, there is no GPS, no broadband internet, and no effective way to monitor the environment or handle emergency situations. Space technologies are also critical for national security.

Southern Launch's unique offering relates to all elements of launch, including designing, building, testing, and flying the next generation of smart rocket vehicles.

## Land

The Southern Launch orbital and suborbital launch facilities are located on the Eyre Peninsula in South Australia. The preservation of this land is at the forefront of how we work, including paying our respect to traditional landowners including the Barngarla (Port Lincoln area), Nauo (southern side), and Wirangu (further west coast) peoples.

We believe that the space industry and biodiversity conservation can coexist. Our Conservation Policy Statement and our Biodiversity Management Strategy illustrate our commitment to establishing two world-class launch complexes that minimise the impact on biodiversity, natural scenic beauty and cultural heritage conservation.

As part of the development of our launch sites, we have consulted with experts from numerous disciplines to ensure our developments have minimal environmental and cultural impacts.

Throughout the development of the Southern Launch Orbital Launch Complex, we will be introducing infrastructure to help eradicate feral animals and weeds to protect native flora and fauna.

## Leadership

Southern Launch has been at the forefront of fostering a full-spectrum, strategic, sovereign and globally engaged Australian space sector.

We believe Australia is ideally placed to be the leading Indo-Pacific hub for launch operations and to play an innovative and significant role in shaping the future global space economy.

We remain a close and committed partner of the Australian Space Agency in pursuit of its vision and strategic objectives.

SOUTHERN LAUNCH

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