







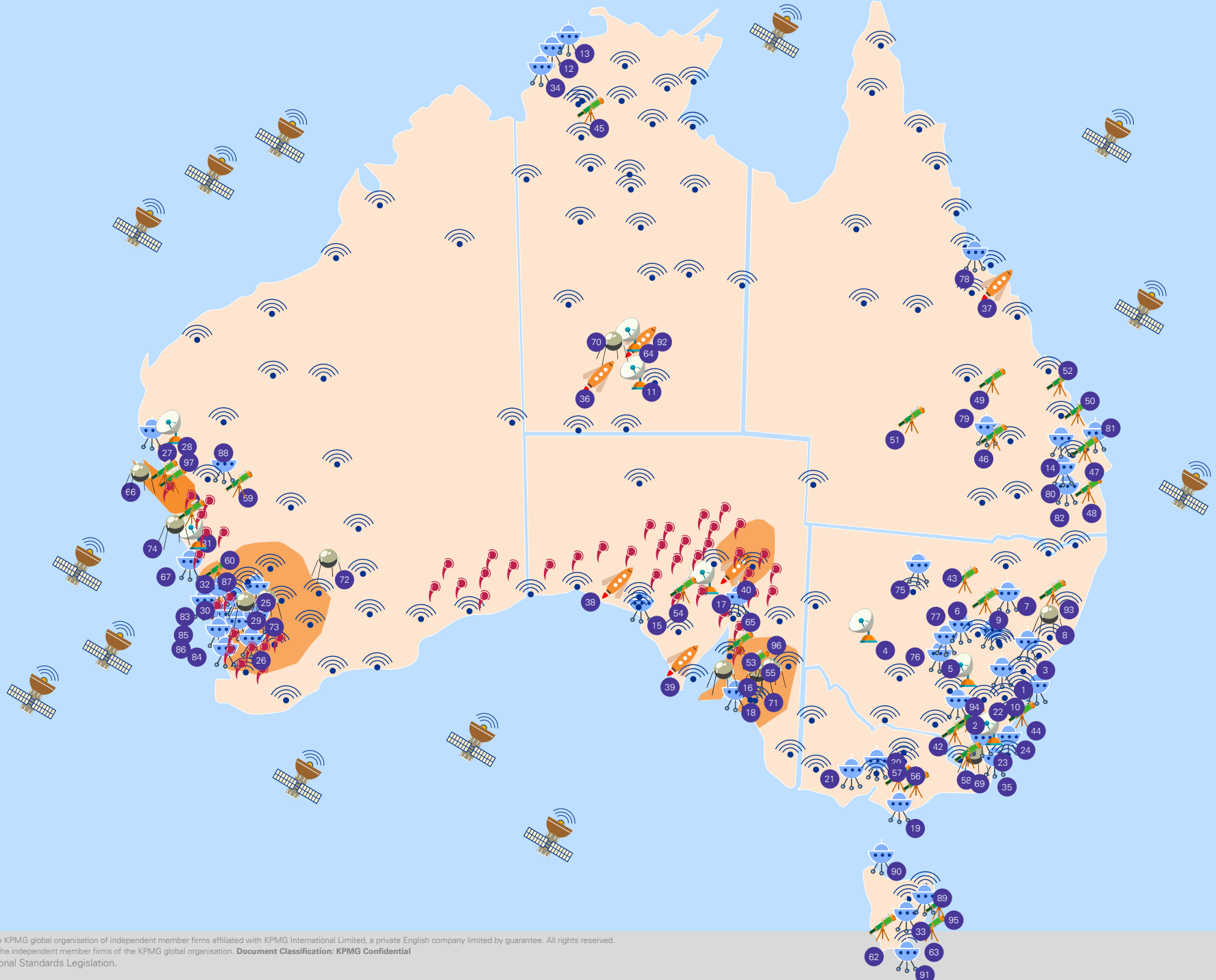


# Leading space infrastructure in Australia

-  GNSS network
-  Desert fireball network
-  Satellites
-  Telescopes & observatories
-  Satellite receiving Ground stations (AU)
-  Ground stations (Non Au)
-  Tracking & control stations
-  Test/launch sites





## Groundstations

### NSW

- Boorowa: Starlink (SpaceX)(5)
- Bourke: NBN Groundstation (75)
- Broken Hill: Starlink (SpaceX) (4)
- Dubbo: O3B Groundstation (77)
- Dubbo: Pivotal Groundstation, also used by GLOBALSAT (76)
- Kensington: BLUEsat UNSW/ACSER Groundstation (1)
- Optus International Groundstation (10)
- Oxford Falls: Telstra International Telecommunication Centre (3)
- Parkes: Parkes CSIRO Groundstation (6)
- Sydney: BoM Earth Station (9)
- Uralla: Lockheed Martin Groundstation (7)
- Wagga Wagga: Commonwealth Government's Defence satellite station in Kapooka (2)

### NT

- ArianeGroup Groundstation (64)
- BOM Middle Point Groundstation (13)
- Humpty Doo: Humpty Doo Transmitting Station (34)
- Pine Gap: Joint Defence Facility US satellite service (11)
- Shoal Bay: Shoal bay receiving station (12)

### QLD

- Brymaroo: Defence Groundstation (80)
- Ningi: Omnispace Groundstation (81)
- Oakey: Army Aviation Centre Wyoming Groundstation (82)
- Optus Groundstation (14)
- Roma: NBN ground station (79)
- Townsville: AIMS IMOS Groundstation (78)

### SA

- Ceduna: OTC Satellite Groundstation (15)
- Mile End: Nova systems Groundstation (65)
- Pibma: Starlink (SpaceX) (17)
- Regency Park: Optus Groundstation (18)

### VIC

- Crib Point: Satellite Groundstation BoM. Data from Japan MTSAT, China Feng Yun 2, NOAA NASA-AQUA Terra 4 SUOMI (19)
- Optus Groundstation (21)
- Richmond: ESS Weathertech's satellite Groundstations (20)

### ACT

- Canberra Deep Space Communication Complex (NASA) (22)
- Defence communications centre (Australia) (23)
- Hume: Optus Groundstation (24)
- Mt Stromlo: Space Environment Research Centre (35)

### WA

- Bassendean: NewSat Groundstation (32)
- Bently: satellite and technology and applications consortium (WATSAC). Sources data for BOM (84)
- Carnarvon: NASA tracking station (28)
- Carnarvon: OTC Satellite Groundstation (27)
- Geraldton: Combined Communications Gateway (67)
- Gnarara: Telstra International Telecommunication Centre (26)
- Meekatharra: Pivotal Groundstation (88)
- New Norcia: ESA in cooperation with ASA Groundstation (25)
- Optus International Groundstation (30)
- Perth: O3B Groundstation (86)
- Perth: SES teleport Groundstation (85)
- Waroona: NBN Groundstation (83)
- West Perth: ITC global Groundstation (87)
- Yatharagga: Satellite Station, owned by the Swedish Space Corporation (31)

### TAS

- Bass strait: Satellite alimentary calibration buoys, IMOS facilities for NASA, CNES, NOAA EU, METSAT (90)
- Geeveston: NBN Groundstation (89)
- Storm bay: Satellite alimentary calibration buoys, IMOS facilities for NASA, CNES, NOAA EU, METSAT (91)
- Tasmanian Earth Resources Satellite Station (33)



## Test/launch sites

### NT

- Alice Springs: High Altitude Balloon Launch Facility (36)
- Nhulunbuy: Equatorial Launch Australia (92)

### QLD

- Abbott Point launch site (In Progress) (37)

### SA

- Koonibba: Koonibba Test Range operated by Southern Launch (38)
- Wahlers Way: Whalers Way Orbital Launch complex operated by Southern Launch (39)
- Woomera: Woomera Test range (40)



## Satellite telemetry, tracking and control stations

### NSW

- Belrose: Optus Groundstation (8)
- Wolumla: NBN TT&C site (69)

### NT

- Alice Springs: Geoscience Australia (70)

### SA

- Edinburgh parks: BAE systems satellite testing facility (71)
- Mawson Lakes: NewSat Groundstation(16)
- No. 1 Remote Sensing Unit (96)

### WA

- Bayswater: Speedcast international TT&C Groundstation (73)
- Exmouth: Harold Holt naval base, EOS Pty Ltd, Lockheed martin space debris tracking, RAAF C-band antenna, (66)
- Kalgoorlie: NBN TT&C Groundstation (72)
- Kojarena: Australian Defence Satellite communications centre (74)
- Lockridge: Optus Groundstation (29)



## Satellites

- 3 in the European Union's QB50 project (EC0, INSPIRE-2, SUSat)
- DoD – Biarri-Point
- Optus – 6 satellites
- Telstra – 2 satellites
- Westpac/Fizeau
- Australia also has over 50 small-sat providers, with leading developers such as Myriota, Immarsat and Kepler Communications



## Networks

- Desert fireball network
- GNSS network – Global navigation satellite system



## Telescopes & leading observatories

### NSW

- Canberra: UNSW Falcon telescope (94)
- Coonabarabran: ANU sliding springs – optical and infra red (43)
- Narrabri: Commonwealth Scientific and Industrial Research Organisation's (CSIRO's) Australian Telescope National Facility installations (41)
- Parkes: Parkes radio telescope CSIRO (42)
- Sydney: Sydney observatory (44)
- Uralla: Lockheed martin primary backup TT&4C. Transfer orbit support services (93)

### NT

- Katherine: AuScope's VLBI Telescope in (45)

### QLD

- Brisbane: Sir Thomas Brisbane Planetarium (47)
- Bundaberg: Alloway observatory (52)
- Charville: Charville Cosmos Centre (51)
- Kingaroy: Kingaroy observatory (49)
- Mount Kent: Mount Kent Observatory (46)
- Spingbrook: Springbrook research observatory (48)
- Wappa Falls Astronomical observatory (50)

### SA

- Adelaide: Adelaide planetarium (55)
- Smithfield: Southern cross outreach observatory project (53)
- Woomera: Woomera Baker observatory (54)

### VIC

- Emerald: Emerald Observatory Space Debris Optical Tracking Station (57)
- Mount Burnett: Mount Burnett observatory (56)

### ACT

- Mount Stromlo :Mount Stromlo Observatory (58)

### WA

- Exmouth: Space surveillance telescope, (68)
- Gingin: Gingin Observatory (60)
- Learmonth: Learmonth Solar Observatory (97)
- Murchison: Australian Square Kilometre Array Path Finder (CSIRO), Murchison Wide Field Array (59)
- Yarragadee: Auscope telescope (61)

### TAS









- Ceduna: UTAS Ceduna observatory, radio astronomy and satellite facility (95)
- Hobart: Mt Canopus observatory (63)
- Mount Pleasant: Mount Pleasant Radio Observatory Auscope (62)



## Hotspots

- Locations with a higher concentration of upstream activity

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