Russian AWS in the Antarctic

Steven Colwell (BAS)
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• AARI currently operates 4 AWS in Antarctica, they are located at the sites of old Russian stations.
  – Molodeznaja (since 2006)
  – Leningradskaya (since 27/01/2008)
  – Russkaya (since 10/02/2008)
  – Druznaja-4 (since 19/12/2009)
• The AWS at Molodeznaja was destroyed on 10/02/2010 by strong winds.
• All AWS are MAWS-110 made by Vaisala.
Future plans

• re-install AWS at Molodeznaja during the summer season 2011-12
• Install an AWS at the airstrip of Progress station in the summer season 2011-12
• Install AWS at the Bunger Oasis field base in the summer season 2012-13.
Current Russian stations

- Bellingshausen 1968 to present
- Novolazarevskaya 1961 to present
- Mirny 1956 to present
- Vostok 1957 to present
- Progress 1988 to present
Closed Russian stations

- Molodeznaya 1962 to 1999
- Leningradskaya 1971 to 1991
- Russkaya 1980 to 1990
- Druznaya-4 1987 to 1995
- Soyuz 1982 to 1989
Russian Stations in Antarctic

- Novolazarevskaya
- Bellingshausen
- Molodeznaya
- Soyus
- Druznaya-4 Progress
- Mirny
- Vostok
- Russkaya
- Lenigradskaya
### Russian Antarctic Stations - overview

<table>
<thead>
<tr>
<th>Station</th>
<th>Synoptic index</th>
<th>Meteorological site height above sea level</th>
<th>Geographical coordinates</th>
<th>Opened</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingshausen</td>
<td>00060</td>
<td>154 m</td>
<td>62°125' 87855'W</td>
<td>February 1960</td>
<td>permanent</td>
</tr>
<tr>
<td>Novolazarevskaya</td>
<td>98612</td>
<td>119 m</td>
<td>70°405' 11150'E</td>
<td>January 18, 1961</td>
<td>permanent</td>
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<tr>
<td>Mirny</td>
<td>80562</td>
<td>389 m</td>
<td>68°205' 3201'E</td>
<td>February 13, 1956</td>
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</tr>
</tbody>
</table>

**Station Bellingshausen**
- **Synoptic index**: 00060
- **Meteorological site height above sea level**: 154 m
- **Geographical coordinates**: 62°125' 87855'W
- **Opened**: February 1960
- **Status**: permanent

**Station Novolazarevskaya**
- **Synoptic index**: 98612
- **Meteorological site height above sea level**: 119 m
- **Geographical coordinates**: 70°405' 11150'E
- **Opened**: January 18, 1961
- **Status**: permanent

**Station Mirny**
- **Synoptic index**: 80562
- **Meteorological site height above sea level**: 389 m
- **Geographical coordinates**: 68°205' 3201'E
- **Opened**: February 13, 1956
- **Status**: permanent

**More information**
- [Station Bellingshausen](#)
- [Station Novolazarevskaya](#)
- [Station Mirny](#)
Station Bellingshausen

Active: Bellingshausen, Mirm, Iakovlev, Vasilevskaya, Pobid, Progress, Marine Troop
Inactive (closed): Molodezhnaya, Komsomol, Lenigradskaya, Petropavlovskaya, Soln

Topography and local environment: Operations (requirements)
Weather and forecasting
Climatic description: Pressure field and surface winds, temperature, humidity, visibility, snowstorms, sea ice, photo gallery (climatic data)

Station synoptic index
Meteorological site height above sea level
4.3 m
Geographical coordinates
E 12° 19' 56" E 59° 58' W

Topography and local environment

The Bellingshausen station is situated on the Billok Peninsula in the south-western part of King-George Island (Vostok Island), being a part of the South Shetland Islands. The coordinates of the station are 62° 12' S and 59° 58' W, its altitude is 16 m above sea level. The station buildings are built on a layer of ice soil, on the both banks of the brook, rising from the small iced lake and flowing into the Ampel Bay. This bay is suitable for ships visits, the disembarkation is executed usually with help of floating transport, sometimes by helicopters.

The King-George Island is the largest island in the archipelago (its length is about 180 km, its width is 30 km). Most of the island is covered by ice with residual glacier thickness of 200 m. The Bellingshausen Peninsula is the greatest area with tree of ice surface, its north-western coast is washed by the Drake Gulf waters and its south-eastern one is washed by the Ernest Shackleton. This peninsula is formed from the igneous rocks, the relief is typical small hills area with altitude up to 150 m and with sheet of fresh water lakes. Most of the year the lakes are covered by ice with the thickness up to 1 m.

The peninsular shores are under sea exposure all the year. Only during separate winter months there is an ice strip near the shore. Usually in the middle of March in the Ampel Bay the fast ice is formed, its thickness reaches 80-100 cm to the end of March. Queen-Royal gulf is clean from the seething ice in September-October. The dates of first ice breaking varies in wide limits from October to November.

Operational requirements

This Bellingshausen station was opened in February 1969, the staff in winter season consisted of about 25 persons. The aeronomical, astronomical, geophysical, geophysical observations were carried out there, as well as biological and medical investigations. The station is located on a base for field investigations of the King-George island.

In 1987 the scientific expedition group was working at the station, the duties of which included the providing of data with the weather forecasts and with the ice situation information for the south-western part of Atlantic and for the south-eastern part of Pacific.

Recently the station is reorganized to the seasonal type (since 1989).

Weather features and forecasting recommendations

General climatic description and atmospheric circulation features

The climate of Billok Peninsula is of marine type with small amplitude of seasonal temperature variations and with intensive cyclonic activity. The weather is unsettled. The gloomy weather with low stratus and strato-cumulus prevails, precipitation is in the form of snow, rain, or drizzle often. Around 229 mm of precipitation falls over a year on average.
Bellingshausen station (89050)

Last revised (DD.MM.YYYY): 17.01.2011, 22.02.1968, 31.12.2010

[Back][Information on station Bellingshausen][Data catalogue]

1. Surface air temperature (°C)
2. Ground temperature (°C)
3. Surface minimum air temperature (°C)
4. Surface maximum air temperature (°C)
5. Relative humidity (%)
6. Precipitation (mm)
7. Surface wind (m/s)
8. Atmospheric pressure on met site height level (hPa)
9. Atmospheric pressure on sea level (hPa)
10. Total cloudiness (degrees)
11. Low level winds (m/s)
12. Surface albedo (%)
13. Sunshine duration (hours)
14. Total solar radiation data (MJ/m²)
15. Reflected radiation data (MJ/m²)
16. Diffused radiation data (MJ/m²)
17. Air temperature (°C) at 850 hPa level (00 GMT)
18. Air temperature (°C) at 700 hPa level (00 GMT)
19. Air temperature (°C) at 500 hPa level (00 GMT)
20. Air temperature (°C) at 300 hPa level (00 GMT)
21. Air temperature (°C) at 200 hPa level (00 GMT)
22. Air temperature (°C) at 100 hPa level (00 GMT)
23. Air temperature (°C) at 30 hPa level (00 GMT)
24. 850 hPa a geopotential height (m) (00 GMT)
25. 700 hPa geopotential height (m) (00 GMT)
26. 500 hPa geopotential height (m) (00 GMT)
27. 300 hPa geopotential height (m) (00 GMT)

Surface air temperature (°C) see also: [anomalies], [ascii-data]

Summary statistics

<table>
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<th>Max</th>
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<tbody>
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<td>0.004</td>
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</tbody>
</table>
Questions

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