WELCOME TO

WORLD RADIATION DATA CENTER

(WRDC)

2008: - 44 Years of Activity.

WMO GAW ROSHYDROMET MGO

Main Geophysical Observatory. Founded in 1849

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ОБСЕРВАТОРИЯ
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World Radiation Data Center (WRDC)

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Historical reference

In 1962 the Secretariat of the World Meteorological Organization (WMO) proposed to create the international system of centralized collection and publication of the data on solar radiation and radiation balance with the aim to facilitate the access to these data (Resolution 12, EC-XVI of WMO, Geneva, May-June 1962).

The WMO proposal was realized and the World Radiation Data Center (WRDC) was set up under the A.I.Voeikov Main Geophysical Observatory (USSR, Leningrad) in 1964.

The basic functions of the WRDC were to collect and publish the results of the world radiometric network observations of global solar radiation and radiation balance of the Earth's underlying surface, as well as the supplementary information on sunshine duration.

In 1984 at the meeting of experts the WRDC activities were approved and due to the increased radiation data needs and higher servicing level requirements the Center functions were considerably extended.

They were directed to developing and introducing into the WRDC practice the automated systems for processing, quality control and publication of radiation data, forming the information base on technical carriers, using up-to-date means for information exchange (Resolution 6, EC-XXXVI of WMO, Geneva, June 1984).

For the period from 1964 through 2007 141 countries (1512 stations) took part in the system of centralized radiation data collection carried out by the WRDC.

The WRDC archive has stored radiation data (per cent of the total number of the world network):

G ~ 75% D ~ 98% Q ~ 64% SS ~ 35 %

Network of Actinometric Sites in WRDC Archive. Arctic Region

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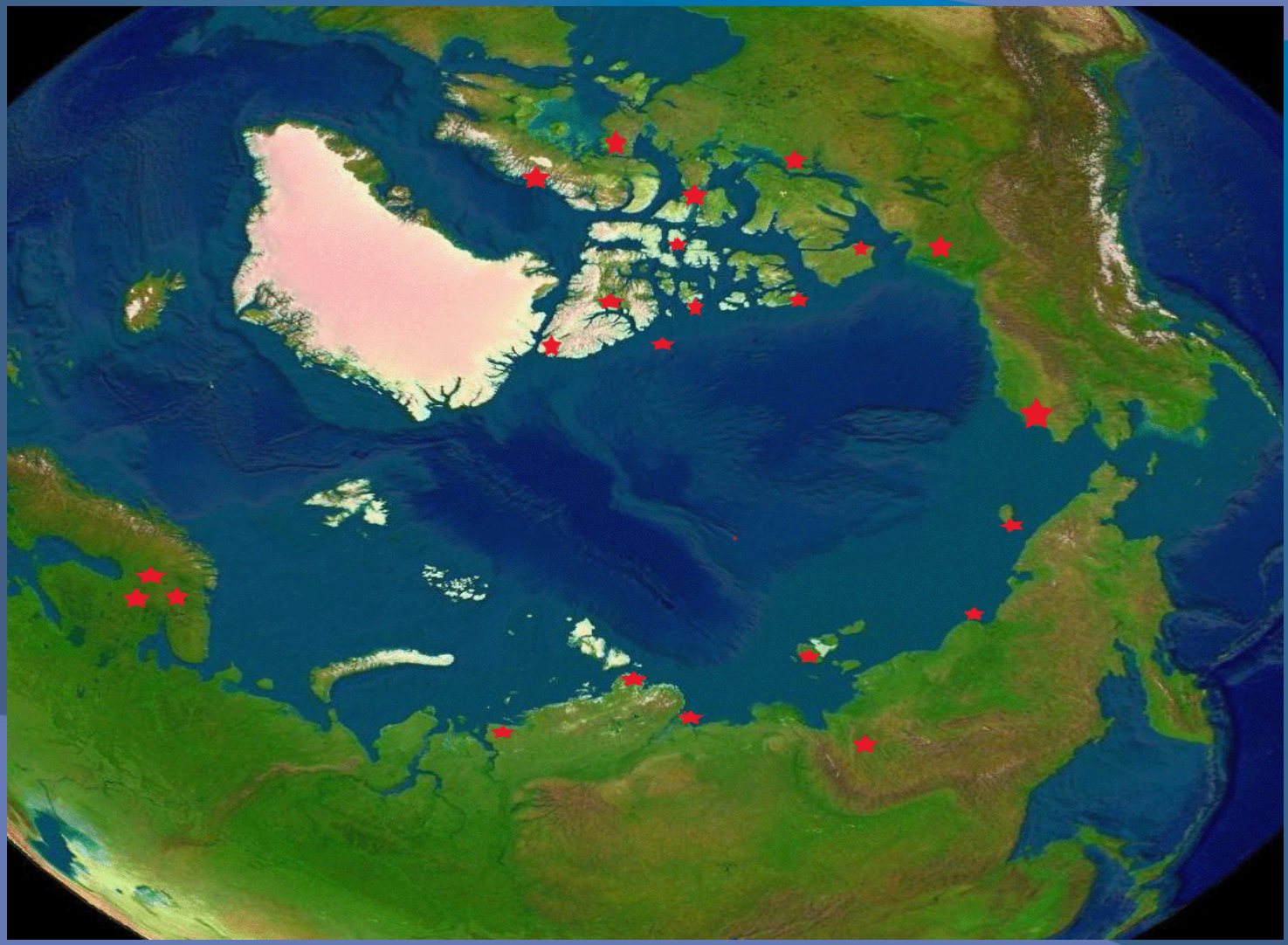

http://www.lib.utexas.edu/maps/islands_oceans_poles/arctic_ref802647_1999.jpg

DATA PRESENCE INFORMATION - THE FIRST AND THE LAST YEAR & MONTH

COUNTRY	STATION	LATITUDE DEG MIN	LONGITUDE DEG MIN	ALTITUDE /M/	RADIATION TYPE			
					GLOBAL RAD.	SUNSHINE	RAD. BALANCE	DIFFUSE RAD.
RUSSIA	KRENKEL OBS.	80 37N	58 03E	20	1964.01-1995.11	1969.01-1995.11	1964.01-1995.11	1995.03-1995.11
RUSSIA	FEDOROV OBS.	77 43N	104 17E	13	1964.01-1996.03	1969.01-1996.01	1964.01-1996.03	1995.03-1996.03
RUSSIA	KOTELNY IS.	76 00N	137 54E	10	1964.01-1994.05	1969.01-1994.01	1964.01-1992.07	NO DATA !
RUSSIA	DICKSON IS.	73 30N	80 24E	47	1964.01-1995.02	1969.01-1995.01	1964.01-1995.02	1995.01-1995.02
RUSSIA	WRANGEL IS.	70 58N	178 32W	3	1964.01-1996.04	1969.01-1995.05	1964.01-1996.04	1995.07-1996.04
RUSSIA	CHETYREKH-STOLBOVOI IS.	70 38N	162 24E	6	1964.01-1994.03	1969.01-1994.03	1964.01-1994.03	NO DATA !
RUSSIA	OLENEK	68 30N	112 26E	127	1964.01-1996.09	1969.01-1996.09	1964.01-1996.09	1990.10-1996.09
RUSSIA	VERKHOYANSK	67 33N	133 23E	137	1964.01-2004.03	1969.01-2004.03	1964.01-2004.03	1990.10-2004.03
CANADA	ICE ISLAND	85 17N	94 03W	3	1969.06-1971.03	1971.01-1971.01	1969.06-1970.12	NO DATA !
CANADA	ALERT	82 30N	62 20W	63	1964.01-2000.12	1969.01-2000.12	1968.07-2000.11	NO DATA !
CANADA	EUREKA	79 59N	85 56W	10	1964.01-1998.05	1970.07-2000.10	1964.06-1998.05	NO DATA !
CANADA	ISACHSEN	78 47N	103 32W	25	1970.07-1978.06	1970.07-1978.05	1970.07-1977.12	NO DATA !
CANADA	MOULD BAY	76 14N	119 20W	15	1965.03-1992.12	1969.01-1987.12	1968.07-1981.12	NO DATA !
CANADA	RESOLUTE	74 43N	94 59W	67	1964.01-2000.02	1969.01-2000.10	1964.02-2000.02	1988.01-2000.02
CANADA	SACHS HARBOU	72 00N	125 16W	88	1970.06-1986.12	1970.06-1986.12	NO DATA !	NO DATA !
CANADA	CLYDE	70 29N	68 31W	25	1988.01-1997.11	NO DATA !	NO DATA !	NO DATA !
CANADA	CAMBRIDGE BAY	69 06N	105 07W	27	1971.10-1998.12	1971.10-2000.11	NO DATA !	NO DATA !
CANADA	HALL BEACH	68 47N	81 15W	8	1970.08-1998.05	1970.12-1980.12	NO DATA !	NO DATA !
CANADA	INUVIK	68 19N	133 32W	103	1964.01-1998.12	1969.01-2000.11	NO DATA !	NO DATA !
CANADA	KUGLUKTUK	67 49N	115 08W	23	NO DATA !	1998.01-2000.11	NO DATA !	NO DATA !
USA	BARROW	71 18N	156 47W	13	1964.02-1974.12	NO DATA !	NO DATA !	NO DATA !
FINLAND	UTSJOKI	69 45N	27 00E	107	1991.01-2006.12	1991.01-2006.12	NO DATA !	1991.01-2006.12
FINLAND	SODANKYLA	67 22N	26 37E	179	1964.01-2006.12	1969.01-2006.12	1964.01-1996.12	1991.01-2006.12
SWEDEN	KIRUNA	67 50N	20 26E	408	1969.01-2006.12	1969.01-2006.12	NO DATA !	1990.01-2006.12

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Suggestions on establishing the basic network of radiometric observations in the Arctic

The Arctic network should consist of different-class stations:
class 1 – stations with an extended set of measured radiation parameters (according to the WMO Guide No.8: direct, diffuse, reflected, global radiation, radiation balance, ultraviolet radiation, longwave downward and upward radiation);
class 2 – stations measuring the basic radiation parameters (direct, diffuse, reflected, global radiation and radiation balance);
class 3 – stations measuring only global radiation (data on global radiation are most wanted among the radiation information users);
Technique:
Instruments should provide the comparability of measurement results. It is desirable to compare different–type instruments used by different countries and to reveal the types corresponding to the requirements for ensuring the comparability of the information obtained;
the measurements should be automated;
the information obtained as a result of measurements should be transmitted
by e-mail.
The radiation data from the whole network of the Arctic should be collected on a centralized basis aiming at the facilitation of the access to them.
The control of radiation data should be made by stages:
primary control is made at stations during measurements;
secondary control is made at national service;
an international center of data collection is entrusted with making the final control.
The procedures for measuring, processing and forming the data for submitting to the international center of data collection should be unified for all stations and countries in the Arctic to provide the comparability of the data.
The international center of data collection should be also entrusted with:
forming the archive of radiation data;
preparing and publishing the radiation data issues;
distributing the issues to the countries participating in the Project on establishing the basic observation network in the Arctic.

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Thank you