These Solar Radio Flux Data are from the International Astronomical Union's (IAU) "Quarterly Bulletin on Solar Activity" (QBSA), 1949-1986. The only exception is the Ottawa data which are the observed values from the official archive at NGDC.

These data were part of a data rescue project funded by the NOAA Earth Systems Data Information Management (ESDIM) and the NASA Space Physics Data System (SPDS) Data Set Preservation and Supply (NASA 01026). Data were key entered using ESDIM funds and processed and quality controlled using NASA SPDS funds.

There are 55 stations in this database with 722 station-years of data in 16.6 Mbytes. The overall format of the files is the same with the only difference being the number of frequencies reported (1 to 15). The included matrix shows the stations, the frequencies, and the years in which these frequencies were reported. Also included is a station listing showing the station's 3 or 4 letter identifier, latitude, longitude, and station name.

=======================================================================

File Format:

-----------------------------------------------------------------------

COLUMNS FMT DESCRIPTION

-----------------------------------------------------------------------

Line 1:

 1-14 14X Blank

15-23 A9 Station identifier

24-.. A9 Station identifier, repeated for

 each frequency reported

Line 2:

 1-14 14X Blank

15-23 I9 Lowest frequency reported

24-.. I9 Repeated for each frequency reported

Line 3 - to end of file:

 1- 4 I4 4-digit year

 5- 6 I2 Month

 7- 8 I2 Day

 9-14 A6 Station 3/4 letter identifier

15-23 A9 Flux value (10\*\*-22 W/m2/Hz) for the frequency reported

 in the 2nd line of the header

24-.. A9 Flux value for the 2nd frequency, repeated for each

 each frequency reported

-----------------------------------------------------------------------

Examples:

 PURP PURP

 3000 9375

19860101 PURP 266

19860102 PURP 264

-----------------------------------------------------------------------

 HARS HARS HARS HARS HARS

 200 208 215 225 228

19550101 HARS

19550102 HARS

=======================================================================

Data problems:

The earlier data come in a variety of forms. Most of the data are in integer form, but some contain decimal values too. Some stations reported "G" for flux values less than 4-6 x 10\*\*-22 W/m2/Hz and not observable. There are also "<" and ">" symbols in the data. The early Sydney data gave 2 values for the same day.

The data were quality controlled as best as possible against the published values, but there are bound to be errors not picked up.

Please contact the NGDC solar data manager if you encounter any data problems (solar.ngdc@noaa.gov).

=======================================================================

Station/data matrix:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

|ABST 209| | XXX| | | |

| 221| | | X| XXXXXXXX|XXXXXXX|

| | | | | | |

|AOP 111| | | XXX | | |

| 231| | XXX| | | |

| 234| | X|XXXXXXXXX | | |

| | | | | | |

|BEIJ 2840| | | | | XXX|

| 9395| | | | | XXX|

| | | | | | |

|BERL 40| | | | | X X|

| 68| | | | |XXX X|

| 111| | | XX|X | |

| 113| | | | XXX|XXXXXXX|

| 234| | | XX|XXXXXXXXXX|XXXXXXX|

| 1470| | | X| XXXXXX|XXXXXXX|

| 1490| | | XXX|XXXXX | |

| 1500| | XXXX|XXXXXXXX | XXX | |

| 2000| | | X | | |

| 9131| | | X| | |

| 9139| | | XX | | |

| 9400| | XXXX|XXXXXXX | | |

| 9500| | | X|XXXXXXXXXX|XXXXXXX|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

|BJU 191| | X | | | |

| 203| | X| | | |

| 209| | X | | | |

| | | | | | |

|BOL 327| | | XXXXXX|XX | |

| | | | | | |

|BORD 930| | | X|XXXXXXXXXX|XXXXXXX|

| | | | | | |

|CAN 200|X|XXX | | | |

| | | | | | |

|CAV 38| | X | | | |

| 45|X| | | | |

| 80|X|X | | | |

| 81| | XXXXXXX | | | |

| 82| | XX | | | |

| 175|X|XXXXXXXX | | | |

| 178| | XX | | | |

| 500|X| | | | |

| | | | | | |

|CIT 150| | XXX| | | |

| | | | | | |

|COR 200| |XXXXXXXXX | | | |

| 202| | XX | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

|CRIM 3100| | | X|XXXXXXXXXX|XXXXXXX|

| | | | | | |

|CUBA 220| | | | XXXXXX | |

| 230| | | | | XXX|

| 234| | | | X|XXXXX |

| 235| | | | | X|

| 6700| | | | XXXXXXXX|XXXXXX |

| 15000| | | | X XXXX|XXXXXXX|

| | | | | | |

|GORK 100| | | XXX|XXXXXXXXXX|XXXXXXX|

| 200| | | XXX|XXXXXXXXXX|XXXXXXX|

| 206| | X | | | |

| 207| | X | | | |

| 208| | X | | | |

| 650| | | | X X|XXXXXXX|

| 950| | | XXX|XX X X|XXXXXXX|

| 2950| | | X|XX XX|XXXXXXX|

| 3000| | XXX| XXX|XX | |

| 3800| | | XXX| | |

| 3840| | | X | | |

| 9100| | | XXX|XX XXX|XXXXXXX|

| 9120| | | | | |

| 9375| | XXX|X | | |

| 9787| | | X | | |

| 19000| | X| | | |

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

|HARS 200| | XXXXX|X | | |

| 208| | | XX | | |

| 215| | | X | | |

| 225| | | XXXXXXXX|XXXX X| |

| 228| | | | XXXXXXX|XX |

| | | | | | |

|HIRA 200| | | XXXXXXX|XXXXXXXXXX|XXXXXXX|

| 500| | XXX|XXXXXXXXXX|XXXXXXXXXX|XXXXXXX|

| | | | | | |

|HUAN 9400| | | X|XXXXXXXXXX|XXXXX |

| | | | | | |

|IRKU 208| | XX| | | |

| 209| | X|XXXXXXX | | |

| 5730| | | | XXX|XX |

| 9240| | | XX | | |

| 9300| | | XX | X | |

| 9350| | | | X | |

| 9375| | | XX | | |

| 9500| | | XX | | |

| 9570| | | XX| | |

| 9600| | | X|X X | |

| 9620| | | X|X | |

| 9650| | | | XX | |

| 9700| | | |XX | |

| 9750| | | | XXX | |

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

|IRS 169| | XXX| | | |

| | | | | | |

|IZMI 202| | | XX|XXX XXX| |

| 204| | | XXXX X| X|XXXXXXX|

| 205| | | X | | |

| 206| | | |XX | |

| 207| | | | XX | |

| 208| | XXX|XXXX | | |

| 210| | | | XX | |

| 545| | X|XXX | | |

| 600| | XX | | | |

| | | | | | |

|JOD 80| | XX | | | |

| 200| | XXX| | | |

| 3000| | XXX| | | |

| | | | | | |

|KIE 210| | | X | | |

| 240| | | XXX|XX | |

| 420| | | XXX|XX | |

| 1420| | | XXX|XX | |

| | | | | | |

|KIEV 188| | | | XX | |

| 204| | | X|XXXX | |

| 550| | | | XXXXXX | |

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

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|KISV 162| | | | XXXX | |

| 178| | XXX|XXXXX | | |

| 204| | | X|X | |

| 220| | | | X | |

| 5900| | | | | XX|

| 6100| | | XXXXXX| XXXXXXX|XXXXX |

| 9300| | | | | XXX|

| 9500| | | | |X |

| 12000| | | | X | |

| 15000| | | XXXXXX| XXX|XXXXXXX|

| | | | | | |

| | | | | | |

|KRAK 430| | | | |XXXXXXX|

| 810| | XX | | |XXXXXXX|

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

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|MANI 606| | | | XXXXXXXX|XXX |

| 1415| | | | XXXXXXXX|XXX |

| 2695| | | | XXXXXXXX|XXX |

| 4995| | | | XXXXXXXX|XXX |

| 8800| | | | XXXXXXXX|XXX |

| | | | | | |

|MAR 158|X|XX | | | |

| 169| | XXX | | | |

|MEU 255| |XXXXX | | | |

| 545| |XXXXX | | | |

| | | | | | |

|NAN 169| | X | | | |

| | | | | | |

|NBS 167| | X XXX | | | |

| 450| | X | | | |

| 460| | XXXX | | | |

| 470| | XX | | | |

| 480|X| | | | |

| | | | | | |

|NED 140| | XXXX X | | | |

| 200| | XXXXXXXX |XXXXXXXXXX|X | |

| 202| | XX| | | |

| 545| | XXXX | | | |

| | | | | | |

|NOBE 17000| | | | X|XXXXXXX|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

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|ONDR 231| | XX|XX | | |

| 260| | | XXXXXXXX|XXXXXXXXXX|XXXXXXX|

| 536| | XXXX|XXXXXXXXXX|XXXXXXXXXX|XXXXXXX|

| 808| | X|XXX | XXXXXXX| |

| | | | | | |

|OSA 3260| | XXX | | | |

| | | | | | |

|OTTA 2800|X|XXXXXXXXXX|XXXXXXXXXX|XXXXXXXXXX|XXXXXXX|

| | | | | | |

|PALE 245| | | | | X |

| 410| | | | | X |

| 610| | | | | X |

| | | | | | |

|PENT 2700| | | | XXXXXXXX|XXXXXXX|

| | | | | | |

|PUL 9375| | XX | | | |

| | | | | | |

|PURP 3000| | | | | X|

| 9375| | | | | X|

| | | | | | |

|RIG 215| | X| | | |

| 216| | X| | | |

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

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|SANM 408| | | XXX|XXX | |

| | | | | | |

|SAOP 7000| | | X|XXXXXXXX |XX |

| | | | | | |

|SGMR 245| | | |XXXXXXXXXX|XXXXXXX|

| 410| | | | XXXXXXXX|XXXXXXX|

| 606| | | XX|XXXXXXXXXX|XXXXXXX|

| 1415| | | XX|XXXXXXXXXX|XXXXXXX|

| 2695| | | XX|XXXXXXXXXX|XXXXXXX|

| 4995| | | XX|XXXXXXXXXX|XXXXXXX|

| 8800| | | XX|XXXXXXXXXX|XXXXXXX|

| 15400| | | XX|XXXXXXXXXX|XXXXXXX|

| | | | | | |

|SIM 208| | XXX| | | |

| 209| | X | | | |

| 210| | XX | | | |

| 3000| | X| | | |

| | | | | | |

|SIS 207| | XX | | | |

| | | | | | |

|SUN 200| | XX | | | |

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

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|SYDN 60|X| X X | | | |

| 62|X|XXX X | | | |

| 85|X| X | | | |

| 97|X| | | | |

| 98| |XXX X | | | |

| 200| |X XXXX | | | |

| 600|X|XXXXXXXXX | | | |

| 700| | | | XXXXX|X |

| 720| | | XXX|XXXXXXX X| |

| 1200| |XXXXXX | | | |

| 1400| | | | XXX X| |

| 1415| | | | XX|X |

| 1420| | XXXX|X XXX|XXXXXX | |

| 3000|X| XXXX | | | |

| 9400| | XXXX | | | |

| | | | | | |

|TOKO 67| | XXX|X | | |

| 100| | XXX|XXX | | |

| 200| | XXXXXXXXX|XXXXX | | |

| 227.5| | | XXX | | |

| 612| | | XX|X | |

| 3000| | XX XXXXX|XXX | | |

| 9000| | X | | | |

| 9500| | XXX|XXXXX | | |

| 17000| | | XXXXXX|X X | |

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_|

|TORN 127| | XX|XXXXXXXXXX|XXXXXXXXXX|XXXXXX |

| | | | | | |

|TRST 235| | | X| | |

| 237| | | X|XXXX XXXX| XX |

| 239| | | X X| | |

| 327| | | | | XXX|

| 408| | | | XX XXXXX| XXX|

| 610| | | | | XX |

| | | | | | |

|TYKW 1000| | XXX|XXXXXXXXXX|XXXXXXXXXX|XXXXXXX|

| 2000| | XXX|XXXXXXXXXX|XXXXXXXXXX|XXXXXXX|

| 3750| | XXXXXXXXX|XXXXXXXXXX|XXXXXXXXXX|XXXXXXX|

| 9400| | XXXXX|XXXXXXXXXX|XXXXXXXXXX|XXXXXXX|

| | | | | | |

|UCCL 169| | XXXX| | | |

| 600| | XXXX|XXXXXXXXXX|XX | |

| | | | | | |

|USS 208| | X| X X XX|X | |

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| |4|5 |6 |7 |8 |

|Station Frequency|9|0123456789|0123456789|0123456789|0123456|

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|VORO 202| | | | X | |

| 207| | | | XXXX | |

| 208| | X| | XXX XX | XXXXX |

| 209| | X| | | |

| 2930| | | | XXXXXX|XXXXXXX|

| 2940| | | | X X X| |

| 2950| | | | X X | |

| | | | | | |

|YUNN 2840| | | | | X|

| 2900| | | | | X XXX |

| 2902| | | | | X X|

| 2913| | | | | XX |

| 3000| | | | | X |

| 3653| | | | | XX |

| 9375| | | | | XXX |

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Station Listing:

ABST 41.75 N 42.83 E Abastumani, Russia

AOP 52.55 N 13.07 E Potsdam Tremsdorf, Germany

BEIJ 40.10 N 116.33 E Beijing, China

BERL 52.43 N 13.53 E Henrich Hertz Institute, Berlin, Germany

BJU 40.35 N 44.28 E Bjurakan, Moscow

BOL 44.50 N 11.30 E Bologna, Italy

BORD 44.85 N 0.30 W Bordeaux, France

CAN 35.30 S 149.44 E Canberra, Australia

CAV 52.17 N 0.03 E Cavendish Lab, Cambridge, England

CIT 57.40 N 11.92 E Chalmers Inst. of Technology, Gothenburg, Sweden

COR 42.00 N 77.00 W Cornell Univ, Ithica, NY, USA

CRIM 44.40 N 33.90 E Crimea, Russia

CUBA 23.10 N 82.40 W Havana, Cuba

GORK 56.10 N 44.30 E Gorky Univ, Russia

HARS 60.21 N 10.75 E Olso, Norway

HIRA 36.37 N 140.63 E Hiraiso, Japan

HUAN 12.04 S 75.32 W Huancayo, Peru

IRKU 52.27 N 104.30 E Irkutsk, Russia

IRS 2.52 N 28.85 E I.R.S.A.D., D.S.-Bukava, Belgin Congo

IZMI 55.47 N 37.30 E IZMIRAN, Moscow, Russia

JOD 53.23 N 2.30 W Jodrell Bank Experiment Station, England

KIE 54.30 N 10.10 E Kiel, Germany

KIEV 50.45 N 30.50 E Kiev Univ, Russia

KISV 43.73 N 42.52 E Kislovodsk, Russia

KRAK 50.05 N 19.83 E Cracaw, Poland

MANI 14.63 N 121.10 E Manila Obs., Philippines

MAR 48.85 N 2.23 E Marcoussis, France

MEU 49.33 N 2.50 E Meudon Obs., Paris, France

NAN 47.30 N 2.20 E Meudon Obs., Nancay Station, France

NBS 40.10 N 105.10 W National Bureau of Standards, Boulder, Colorado, USA

NED 52.23 N 5.08 E Nederhorst, Netherlands

NOBE 35.94 N 138.48 E Nobeyama Solar Radio Obs.,Japan

ONDR 49.91 N 14.78 E Ondrejov Obs., Ondrejov, near Prague, Czech Republic

OSA 34.67 N 135.50 E Osaka, Japan

OTTA 45.95 N 70.05 W Ottawa, Canada

PALE 21.38 N 158.07 W Palehua Solar Obs., Palehua, Hawaii, USA

PENT 49.32 N 119.62 W Penticton, Canada

PUL 59.77 N 30.32 E Pulkovo, Russia

PURP 32.07 N 118.82 E Purple Mountain Obs., Nanjing, China

RIG 56.95 N 24.07 E Riga, Russia

SANM 35.40 S 58.80 W San Miguel, Argentina

SAOP 22.55 S 46.63 W Sao Paulo, Brazil

SGMR 42.63 N 70.82 W Sagamore Hill Radio Obs., Hamilton, Mass., USA

SIM 44.40 N 33.98 E Simferopol, Russia

SIS 44.40 N 34.00 E Simeis, Russia

SUN 32.72 N 105.45 W Sunspot, New Mexico, USA

SYDN 33.80 S 150.77 E Sydney, Australia

TOKO 35.67 N 139.54 E Tokyo Astronomical Obs., Mitaka, Japan

TORN 53.00 N 18.60 E Torun, Poland

TRST 45.64 N 13.88 E Trieste, Italy

TYKW 34.83 N 137.37 E Nagoya Univ, Toyokawa, Japan

UCCL 50.18 N 5.25 E Uccle, Humain, Belgium

USS 43 N 132 E Ussuruisk, Russia

VORO 43.81 N 131.89 E Voroshilov, Russia

YUNN 25.03 N 102.78 E Yunnan Obs., Kunming, China

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