

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR DIVISION

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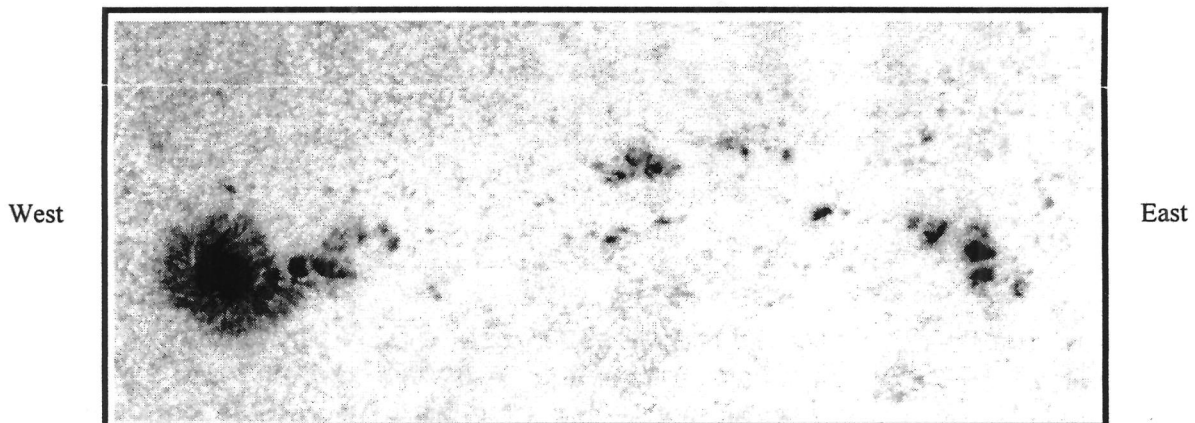
American Relative Sunspot Numbers, R_a , for August 1997

Date	R_a Final		Date	R_a Final		Date	R_a Final
1	0		11	39		21	11
2	5		12	53		22	11
3	16		13	56		23	3
4	13		14	45		24	1
5	20		15	35		25	17
6	42		16	24		26	24
7	46		17	20		27	30
8	48		18	13		28	43
9	39		19	12		29	48
10	22		20	11		30	57
						31	68

Monthly Mean = 28.2

(Based on 1082 observations contributed by 60 observers.)

Art Whipple has provided this fine photograph of NOAA Region 8076 taken on August 30, 1997. August witnessed a dramatic increase in sunspot activity, as the sunspot numbers show. This generally occurred in high heliographic latitudes, and it cannot be doubted that a new cycle is in progress.



This photograph was taken using a 4.5-inch refractor with a front aperture neutral density filter, a 9nm interference filter centered on 520nm, and a projection lens to bring the scale at the film to about 15 arcsec/mm. The scale of the print is around 0.7 arcsec/mm. The film is Kodak Technical Pan developed in HC 110 dilution B for 12 minutes.

Note to Observers: Please get reports to me by the 14th of the month, allowing 7-8 days for trans-oceanic mail. If available, use e-mail in preference to attached files or postal mail.

Betty Stephenson

please turn over

Sudden Ionosphere Disturbance Report

Prepared by Casper H. Hossfield

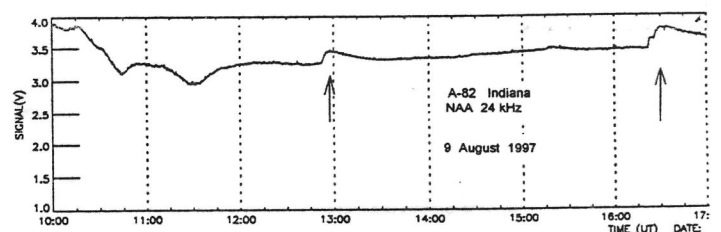
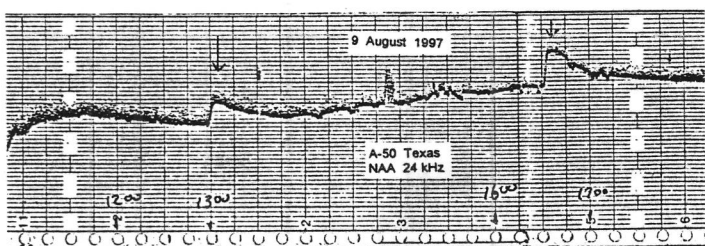
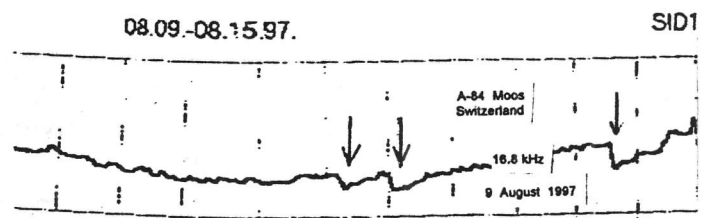
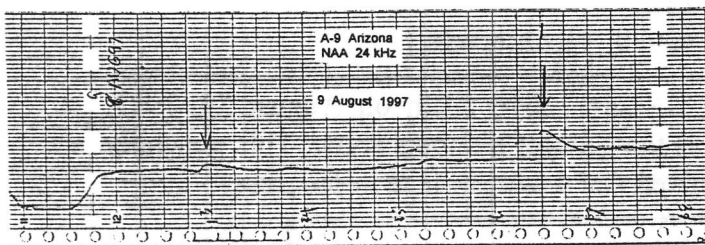
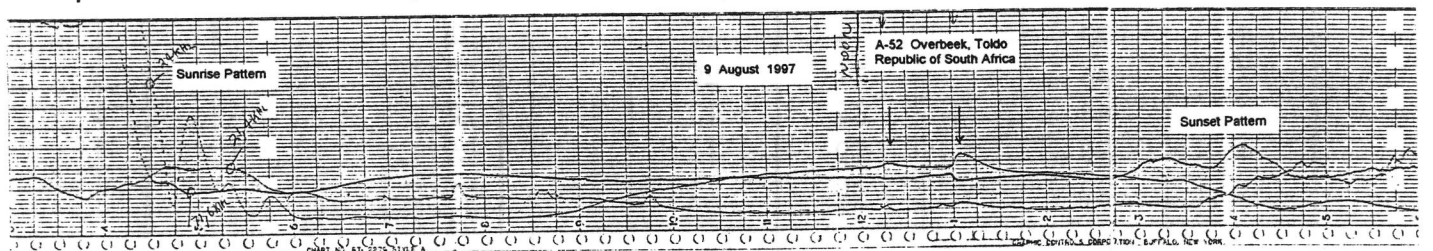
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Sudden Ionosphere Disturbances Recorded During August 1997

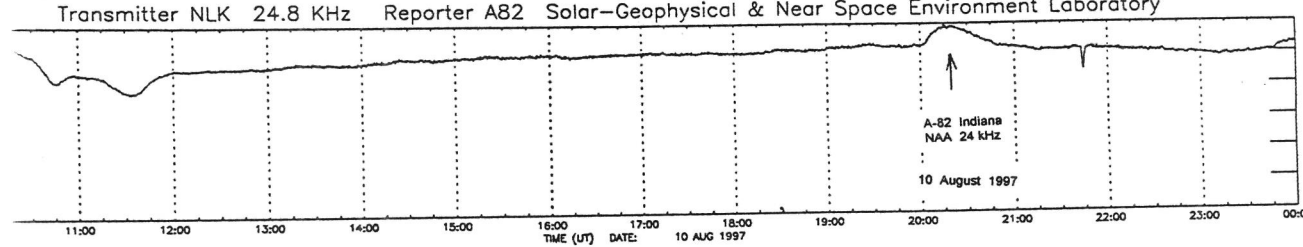
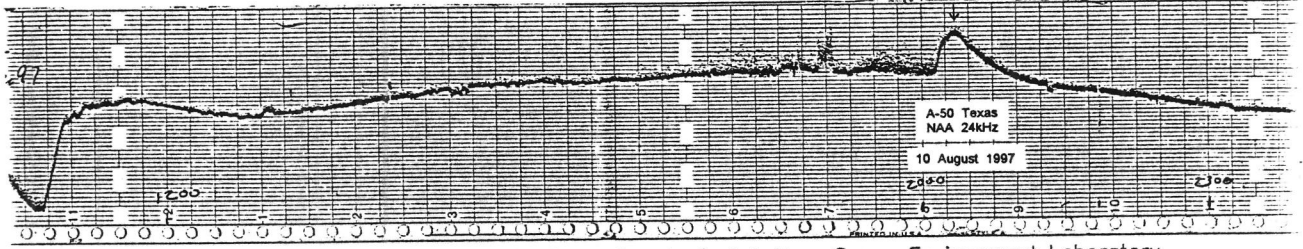
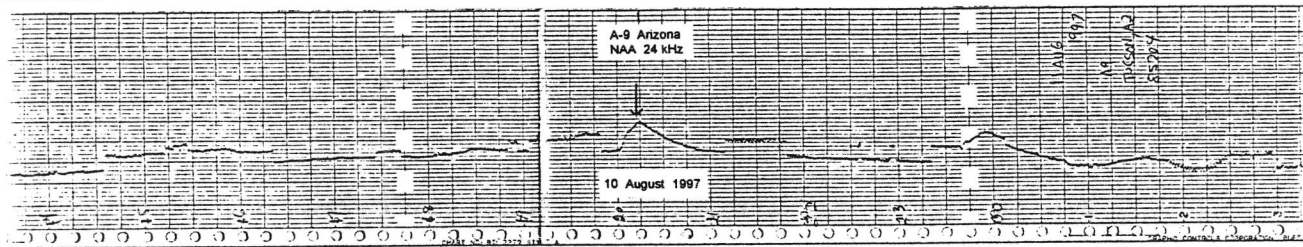
Date	Start	Definiteness	Date	Start	Definiteness	Date	Start	Definiteness
970809	1215	5	970809	1632	5	970825	1635	5
970809	1300	5	970810	2009	5			

The above SIDs are those that were reported by more than one observer. All were also found on charts submitted for evaluation and are reproduced below. The following observers submitted reports and/or charts for August: A-9 Scharlach, Arizona / A-40 Parker, California / A50 Winkler Texas / A-52 Overbeek-Toldo Republic of South Africa / A-62 Stokes, Ohio / A-63 Ellerbe, Spain / A-69 Rosenberg, Arizona / A-72 Witkowski, Florida / A-80 King, England / A/81 Landry, New Hampshire / A-82 Lawrence, Indiana / A-84 Moss, Switzerland.



The Above charts show three widely recorded SIDs on 9 August. A-52 recorded the two early events and A-9, A50 and A-82 recorded the two later events. A-84 recorded all three as inverted events. A-52 uses a multiplexer to record three signals on one chart. The 71.6 kHz trace is inverted and its contrast with the normal trace of NAA on 24kHz makes the two events easy to identify with confidence even though the early event is small enough to be missed on a chart that wasn't multiplexed. This small event does not show at all on the A-9, A-50' or A-82's charts because it is too close to their sunrise pattern when sensitivity is low. It is very clear on A-84 because his sunrise pattern was much earlier. The above shows how easy it is to establish high definiteness when recordings are available from various longitudes and frequencies. An SID the next day, 10 August, is shown on the next page.

The SID that occurred on 10 August was also widely recorded. Three charts below show how it was recorded by observers A-9, A-50 and A-82. A-82 made his recordings with a computer using a system he described in SID Technical Bulletin, Volume 8, Number 2. Some observers did not receive this Technical Bulletin and if you are one of them you can get a free copy from A-82. His address is: Joseph Lawrence, 1808 N. Anthony Blvd., Fort Wayne, IN 46805, USA. His E-Mail address is: < lawrence@cvax.ipfw.indiana.edu > A kit to build the A/D converter is available for \$75.00 and A-82 will supply the software free. If you are handy with a soldering iron seventy five dollars will liberate you forever from the Rustrak recorders numerous well known problems.



Transmitter NLK 24.8 KHz Reporter A82 Solar-Geophysical & Near Space Environment Laboratory

An SID on 25 August was also widely recorded. This event is shown on three recordings below

