

**Plains Elevated Convection at Night (PECAN)**  
**Rawinsonde RS41 - SGP**  
**A Component of**  
**Millersville University Atmospheric Research and Aerostat Facility (MARAF)**

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**1.0 Data Set Overview:**

This data set contains files of mandatory and significant levels, one second data, sounding quality report and skew – T compiled by the Millersville University Rawinsonde systems located at 38.9361°N, 99.5592° W at 646 meters above sea level from 01 June 2015 to 15 July 2015.

**2.0 Daily Reports:**

02 June 2015: Nothing unusual to record. One launch at 0300z

03 June 2015: No sounding quality report issued. Three launches every hour and a half starting at 0000z, ending at 0600z.

04 June 2015: No sounding quality report issued. Three launches every hour and a half starting at 0000z, ending at 0600z.

05 June 2015: No sounding quality report issued. Three launches every hour and a half starting at 0300z, ending at 0600z.

06 June 2015: No sounding quality report issued. Three launches every three hours starting at 0000z, ending at 0300z.

07 June 2015: No Launches

08 June 2015: No sounding quality report issued. Three launches every three hours starting at 0300z, ending at 0600z.

09 June 2015: No Launches

10 June 2015: No sounding quality report issued. Twelve launches, ten every half hour beginning at 0000z till 0433z, then two launches every three hours beginning a 0600z, ending at 0900z.

11 June 2015: No sounding quality report issued. Two launches every three hours starting at 0000z, ending at 0300z.

12 June 2015: No sounding quality report issued. Two launches every three hours starting at 0000z, ending at 0300z.

13 June 2015: No launches

14 June 2015: No launches

15 June 2015: No sounding quality report issued. Two launches at 0046z, and 0400z.

16 June 2015: From 0230 Z until 1530 Z, there is insufficient data due to condensation issues with the glass on the Lidar enclosure. The Lidar was off from 1616 Z until 1648 Z.

17 June 2015: No sounding quality report issued. One launch at 0000z.

18 June 2015: No Launches

19 June 2015: No sounding quality report issued. One launch at 0002z.

20 June 2015: No sounding quality report issued. Thirteen launches beginning at 2130z on 06/19, ending at 0600z. Four launches every hour and a half beginning at 0730z, ending at 1200z.

21 June 2015: No sounding quality report issued. Two launches, one at 0300z and another at 2200z.

22 June 2015: No sounding quality report issued. Thirteen launches beginning at 0000z every hour and a half hour till 0300z then every half hour till 0600z, then back to hour and a half until 1200z.

23 June 2015: No sounding quality report issued. One launch at 0300z.

24 June 2015: No sounding quality report issued. Launches at 0000z, 0130z, 0300z, and 0600z.

25 June 2015: No sounding quality report issued. Launches at 0000z and 0300z.

26 June 2015: No sounding quality report issued. Three launches beginning at 0000z every three hours until 0600z.

27 June 2015: No launches.

28 June 2015: No Launches.

29 June 2015: No sounding quality report issued. One launch at 0300z.

30 June 2015: No sounding quality report issued. Launches at 0000z, 0200z, and 0400z.

01 July 2015: No sounding quality report issued. Launches every three hours beginning at 0000z and ending at 0600z. Two requested launches at 0845z and 0930z.

02 July 2015: No sounding quality report issued. One launch at 0300z.

03 July 2015: No sounding quality report issued. Launches at 0300z and 0600z.

04 July 2015: No sounding quality report issued. Launches at 0300z, 0500z, and 0700z.

05 July 2015: No sounding quality report issued. Launches at 0000z, 0300z, and 0600z.

06 July 2015: No sounding quality report issued at 0300z launch. Launches at 0300z, and 0644z.

07 July 2015: No launches.

08 July 2015: No launches.

09 July 2015: No sounding quality report issued. Launches at 0200z, 0400z, and 0600z.

10 July 2015: No sounding quality report issued. Launches every two hours beginning at 0000z and ending at 0600z with requested launches at 0507z and 0700z.

11 July 2015: No sounding quality report issued. Launches every two hours beginning at 0000z, ending at 0800z. Another launch at 2200z.

12 July 2015: No sounding quality report issued. Launches every hour and a half beginning at 0000z ending at 0430z with another launch at 0550z.

13 July 2015: No launches.

14 July 2015: No sounding quality report issued. Launches every two hours beginning at 0000z and ending 0600z.

15 July 2015: No sounding quality report issued. Launches every two hours beginning at 0000z ending at 0400z with another launch at 0521z.

16 July 2015: Sounding quality report issued at 0000z. Launches every hour beginning at 0000z ending at 0600z without a launch at 0300z.

### **3.0 Products:**

The files produced at the termination of radiosondes include one-second data, mandatory and significant levels, skew – T, and sounding quality reports. The skew – T is a PNG file while the others are produced as text files.

The file naming conventions are as follows:

upperair.Millersville\_FP3\_radiosonde.YYYYMMDDHHMM.man\_sig\_levels

This is the Mandatory and significant levels file where YYYYMMDDHHMM is the UTC year, month, day, hour, and minute

upperair.Millersville\_FP3\_radiosonde.YYYYMMDDHHMM.one\_second

This is the one-second data file where YYYYMMDDHHMM is the UTC year, month, day, hour, and minute

upperair.Millersville\_FP3\_radiosonde.YYYYMMDDHHMM.SkewT

This is the skew – T file where YYYYMMDDHHMM is the UTC year, month, day, hour, and minute

### **4.0 Instrument Description:**

The Vaisala Radiosonde RS41 - SGP operating at 401.04 - 405.04 MHz for more information visit:

<http://www.vaisala.com/en/pages/default.aspx>

System trademark and model: MW41.

Software version: MW41 2.2.1.

Ground Check device: RI41

Ground check device hardware version: 0x60

Ground check device software version: 1.00

Sensor	Type	Range	Uncertainty	Resolution	Repeatability	Reproducibility
Temperature	Platinum Resistor	+60° to -90°C	Ground Prep: ± 0.2°C 0-16 km: ± 0.3°C > 16 Km: ± 0.4°C	0.01°C	± 0.1°C	1080-100 hPa: ± 0.15°C 100-3 hPa: ± 0.30°C
Humidity	Thin-film Resistor	0 – 100% RH	Ground Prep: ± 3% RH Sounding: ± 4% RH	0.1% RH	± 2% RH	± 2% RH
Pressure	GPS- Based	Surface – 3 hPa	> 100 hPa: ±1.0 hPa 100-10 hPa: ±0.3 hPa <10 hPa: ±0.04 hPa	0.01 hPa	-----	>100 hPa: ±0.5 hPa 100-10 hPa: ±0.2 hPa <10 hPa: ±0.04 hPa
Wind Speed	GPS - Based	Max: 160 m/s	±0.15 m/s	0.1 m/s	-----	-----
Wind Direction	GPS - Based	Direction: 0 - 360°	±2 deg.	0.1 deg.	-----	-----
Geopotential Height Measurement	GPS - Based	Ground – 40,000 m	±10.0 gpm	0.1 gpm	-----	±6.0 gpm