

# 74794 XMR Cape Kennedy Observations at 00Z 24 Jul 2015

| PRES<br>hPa | HGHT<br>m | TEMP<br>C | DWPT<br>C | RELH<br>% | MIXR<br>g/kg | DRCT<br>deg | SKNT<br>knot | THTA<br>K | THTE<br>K | THTV<br>K |
|-------------|-----------|-----------|-----------|-----------|--------------|-------------|--------------|-----------|-----------|-----------|
| 1015.0      | 3         | 27.0      | 23.3      | 80        | 18.12        | 160         | 4            | 298.9     | 351.9     | 302.1     |
| 1000.0      | 142       | 27.4      | 21.4      | 70        | 16.33        | 190         | 15           | 300.6     | 348.7     | 303.5     |
| 999.0       | 151       | 27.4      | 21.4      | 70        | 16.35        | 191         | 15           | 300.6     | 348.8     | 303.6     |
| 981.8       | 305       | 26.8      | 19.5      | 64        | 14.75        | 200         | 14           | 301.5     | 345.2     | 304.2     |
| 972.0       | 394       | 26.4      | 18.4      | 61        | 13.90        | 204         | 14           | 302.0     | 343.2     | 304.5     |
| 955.0       | 550       | 26.0      | 18.0      | 61        | 13.79        | 212         | 13           | 303.1     | 344.2     | 305.6     |
| 948.5       | 610       | 25.5      | 18.2      | 64        | 14.08        | 215         | 13           | 303.2     | 345.2     | 305.8     |
| 925.0       | 831       | 23.8      | 19.0      | 75        | 15.19        | 230         | 14           | 303.6     | 349.0     | 306.4     |
| 916.3       | 914       | 23.0      | 19.4      | 81        | 15.79        | 235         | 15           | 303.6     | 350.7     | 306.5     |
| 904.0       | 1032      | 21.8      | 20.1      | 90        | 16.68        | 241         | 15           | 303.6     | 353.4     | 306.6     |
| 901.0       | 1061      | 21.6      | 20.2      | 92        | 16.84        | 242         | 15           | 303.7     | 353.9     | 306.7     |
| 897.0       | 1100      | 21.2      | 19.8      | 92        | 16.49        | 244         | 16           | 303.6     | 352.9     | 306.6     |
| 884.8       | 1219      | 20.5      | 18.9      | 91        | 15.81        | 250         | 16           | 304.1     | 351.3     | 306.9     |
| 851.0       | 1556      | 18.4      | 16.4      | 88        | 13.98        | 255         | 14           | 305.3     | 347.4     | 307.9     |
| 850.0       | 1566      | 18.4      | 16.2      | 87        | 13.82        | 255         | 14           | 305.4     | 347.0     | 307.9     |
| 831.0       | 1760      | 18.0      | 13.0      | 73        | 11.45        | 266         | 12           | 307.0     | 341.8     | 309.1     |
| 824.4       | 1829      | 17.5      | 12.9      | 75        | 11.48        | 270         | 11           | 307.1     | 342.0     | 309.2     |
| 795.4       | 2134      | 15.2      | 12.5      | 84        | 11.60        | 280         | 8            | 307.8     | 343.2     | 310.0     |
| 793.0       | 2160      | 15.0      | 12.5      | 85        | 11.61        | 280         | 8            | 307.9     | 343.3     | 310.0     |
| 767.4       | 2438      | 14.4      | 8.8       | 69        | 9.32         | 285         | 9            | 310.2     | 339.1     | 311.9     |
| 765.0       | 2465      | 14.4      | 8.4       | 67        | 9.12         | 286         | 9            | 310.4     | 338.7     | 312.1     |
| 740.1       | 2743      | 12.5      | 7.0       | 69        | 8.55         | 300         | 8            | 311.3     | 338.0     | 312.9     |
| 700.0       | 3210      | 9.4       | 4.6       | 72        | 7.65         | 325         | 5            | 312.9     | 336.9     | 314.3     |
| 663.1       | 3658      | 6.9       | 2.3       | 72        | 6.84         | 315         | 8            | 315.0     | 336.8     | 316.3     |
| 644.0       | 3899      | 5.6       | 1.0       | 72        | 6.43         | 315         | 10           | 316.1     | 336.7     | 317.3     |
| 635.0       | 4015      | 5.0       | -2.0      | 61        | 5.23         | 315         | 11           | 316.7     | 333.7     | 317.7     |
| 615.6       | 4267      | 3.3       | -2.8      | 64        | 5.07         | 315         | 13           | 317.6     | 334.1     | 318.6     |
| 612.0       | 4315      | 3.0       | -3.0      | 65        | 5.04         | 314         | 13           | 317.7     | 334.2     | 318.7     |
| 607.0       | 4382      | 2.4       | -0.4      | 82        | 6.16         | 313         | 13           | 317.8     | 337.7     | 319.0     |
| 605.0       | 4409      | 2.0       | -0.7      | 82        | 6.05         | 313         | 13           | 317.6     | 337.2     | 318.8     |
| 600.0       | 4476      | 2.0       | -3.0      | 69        | 5.14         | 312         | 13           | 318.4     | 335.2     | 319.4     |
| 591.0       | 4598      | 1.2       | -2.5      | 76        | 5.42         | 310         | 14           | 318.8     | 336.5     | 319.9     |
| 580.0       | 4750      | 0.4       | -3.3      | 76        | 5.20         | 307         | 14           | 319.6     | 336.7     | 320.6     |
| 576.0       | 4805      | 0.4       | -6.6      | 59        | 4.07         | 306         | 14           | 320.2     | 333.8     | 321.0     |
| 570.9       | 4877      | -0.1      | -6.1      | 64        | 4.26         | 305         | 14           | 320.5     | 334.6     | 321.3     |
| 563.0       | 4989      | -0.9      | -5.4      | 72        | 4.57         | 301         | 14           | 320.8     | 336.0     | 321.7     |
| 559.0       | 5046      | -1.1      | -8.1      | 59        | 3.73         | 299         | 14           | 321.2     | 333.8     | 322.0     |
| 550.0       | 5175      | -1.9      | -5.3      | 78        | 4.71         | 295         | 14           | 321.8     | 337.4     | 322.7     |
| 549.5       | 5182      | -1.9      | -5.5      | 76        | 4.64         | 295         | 14           | 321.8     | 337.3     | 322.7     |
| 544.0       | 5263      | -2.1      | -8.1      | 63        | 3.84         | 297         | 14           | 322.6     | 335.5     | 323.3     |
| 542.0       | 5292      | -2.3      | -5.7      | 77        | 4.64         | 297         | 14           | 322.6     | 338.1     | 323.6     |
| 500.0       | 5930      | -6.1      | -9.1      | 79        | 3.86         | 310         | 16           | 325.5     | 338.7     | 326.3     |
| 496.0       | 5993      | -6.5      | -9.1      | 82        | 3.89         | 312         | 16           | 325.8     | 339.1     | 326.6     |
| 489.5       | 6096      | -6.8      | -12.2     | 66        | 3.09         | 315         | 15           | 326.6     | 337.3     | 327.2     |
| 488.0       | 6120      | -6.9      | -12.9     | 62        | 2.92         | 316         | 15           | 326.8     | 337.0     | 327.4     |
| 485.0       | 6168      | -7.5      | -11.1     | 75        | 3.40         | 317         | 15           | 326.7     | 338.4     | 327.3     |
| 479.0       | 6265      | -7.5      | -15.5     | 53        | 2.40         | 321         | 14           | 327.8     | 336.3     | 328.3     |
| 475.0       | 6330      | -7.7      | -11.5     | 74        | 3.36         | 323         | 14           | 328.4     | 340.0     | 329.0     |
| 470.7       | 6401      | -8.1      | -11.9     | 74        | 3.29         | 325         | 14           | 328.7     | 340.1     | 329.4     |
| 459.0       | 6596      | -9.3      | -12.9     | 75        | 3.10         | 322         | 13           | 329.6     | 340.4     | 330.2     |
| 452.5       | 6706      | -9.8      | -14.2     | 70        | 2.83         | 320         | 13           | 330.3     | 340.2     | 330.9     |
| 432.0       | 7064      | -11.5     | -18.5     | 56        | 2.07         | 334         | 12           | 332.6     | 340.0     | 333.0     |
| 426.0       | 7171      | -12.1     | -22.1     | 43        | 1.54         | 338         | 12           | 333.1     | 338.8     | 333.4     |

|       |       |       |       |    |      |     |    |       |       |       |
|-------|-------|-------|-------|----|------|-----|----|-------|-------|-------|
| 424.0 | 7207  | -12.1 | -24.1 | 36 | 1.29 | 339 | 12 | 333.6 | 338.4 | 333.8 |
| 422.0 | 7243  | -12.3 | -24.3 | 36 | 1.28 | 340 | 12 | 333.8 | 338.5 | 334.0 |
| 417.0 | 7334  | -13.1 | -20.1 | 56 | 1.87 | 344 | 12 | 333.9 | 340.7 | 334.3 |
| 414.0 | 7389  | -13.5 | -19.5 | 61 | 1.98 | 346 | 12 | 334.1 | 341.3 | 334.5 |
| 412.0 | 7426  | -13.3 | -22.3 | 47 | 1.56 | 347 | 11 | 334.8 | 340.6 | 335.1 |
| 401.6 | 7620  | -14.7 | -25.4 | 40 | 1.21 | 355 | 11 | 335.4 | 340.0 | 335.7 |
| 400.0 | 7650  | -14.9 | -25.9 | 39 | 1.16 | 355 | 12 | 335.5 | 339.9 | 335.8 |
| 376.0 | 8116  | -18.1 | -32.1 | 28 | 0.69 | 8   | 13 | 337.3 | 340.0 | 337.4 |
| 371.0 | 8216  | -18.7 | -28.7 | 41 | 0.97 | 11  | 13 | 337.8 | 341.5 | 338.0 |
| 368.0 | 8276  | -19.3 | -27.3 | 49 | 1.11 | 13  | 13 | 337.8 | 342.0 | 338.0 |
| 365.0 | 8337  | -19.1 | -33.1 | 28 | 0.65 | 14  | 13 | 338.8 | 341.4 | 339.0 |
| 361.0 | 8419  | -19.9 | -28.9 | 45 | 0.98 | 17  | 13 | 338.8 | 342.6 | 339.0 |
| 355.4 | 8534  | -20.6 | -29.4 | 46 | 0.95 | 20  | 13 | 339.3 | 343.0 | 339.5 |
| 327.1 | 9144  | -24.6 | -31.7 | 52 | 0.83 | 10  | 20 | 342.1 | 345.3 | 342.2 |
| 325.0 | 9192  | -24.9 | -31.9 | 52 | 0.82 | 12  | 20 | 342.3 | 345.5 | 342.4 |
| 308.0 | 9581  | -27.5 | -39.5 | 31 | 0.40 | 24  | 22 | 343.9 | 345.6 | 344.0 |
| 307.0 | 9604  | -27.7 | -39.7 | 31 | 0.40 | 25  | 22 | 343.9 | 345.6 | 344.0 |
| 300.0 | 9770  | -29.1 | -40.1 | 34 | 0.39 | 30  | 23 | 344.2 | 345.9 | 344.3 |
| 275.7 | 10363 | -33.9 | -46.5 | 27 | 0.21 | 35  | 17 | 345.7 | 346.6 | 345.8 |
| 270.0 | 10511 | -35.1 | -48.1 | 25 | 0.18 | 35  | 17 | 346.1 | 346.8 | 346.1 |
| 263.9 | 10668 | -36.6 | -48.1 | 29 | 0.19 | 35  | 16 | 346.1 | 346.9 | 346.1 |
| 262.0 | 10719 | -37.1 | -48.1 | 31 | 0.19 | 36  | 16 | 346.1 | 346.9 | 346.1 |
| 250.0 | 11040 | -39.7 | -50.7 | 30 | 0.15 | 40  | 17 | 346.9 | 347.6 | 346.9 |
| 241.2 | 11278 | -41.8 | -52.2 | 32 | 0.13 | 55  | 17 | 347.3 | 347.9 | 347.3 |
| 230.4 | 11582 | -44.5 | -54.1 | 34 | 0.11 | 45  | 17 | 347.8 | 348.2 | 347.8 |
| 220.0 | 11887 | -47.2 | -56.0 | 36 | 0.09 | 55  | 16 | 348.1 | 348.6 | 348.2 |
| 200.0 | 12520 | -52.9 | -59.9 | 42 | 0.06 | 55  | 16 | 348.8 | 349.1 | 348.9 |
| 187.0 | 12951 | -56.7 | -62.7 | 47 | 0.04 | 50  | 15 | 349.5 | 349.7 | 349.5 |
| 185.0 | 13019 | -57.3 | -62.3 | 53 | 0.05 | 49  | 15 | 349.6 | 349.8 | 349.6 |
| 173.7 | 13411 | -60.1 |       |    |      | 45  | 14 | 351.4 |       | 351.4 |
| 150.0 | 14320 | -66.5 |       |    |      | 20  | 11 | 355.3 |       | 355.3 |
| 149.8 | 14326 | -66.5 |       |    |      | 20  | 12 | 355.4 |       | 355.4 |
| 128.4 | 15240 | -73.7 |       |    |      | 35  | 18 | 358.5 |       | 358.5 |
| 123.0 | 15497 | -75.7 |       |    |      | 35  | 19 | 359.3 |       | 359.3 |
| 122.0 | 15545 | -75.9 |       |    |      | 35  | 19 | 359.8 |       | 359.8 |
| 115.7 | 15850 | -77.2 |       |    |      | 40  | 20 | 363.0 |       | 363.0 |
| 113.0 | 15985 | -77.7 |       |    |      | 60  | 23 | 364.4 |       | 364.4 |
| 109.7 | 16154 | -77.8 |       |    |      | 75  | 21 | 367.3 |       | 367.3 |
| 106.0 | 16352 | -77.9 |       |    |      | 73  | 19 | 370.7 |       | 370.7 |
| 100.0 | 16690 | -72.9 |       |    |      | 70  | 16 | 386.6 |       | 386.6 |
| 93.9  | 17058 | -73.7 |       |    |      | 76  | 17 | 392.1 |       | 392.1 |
| 82.2  | 17844 | -68.7 |       |    |      | 89  | 20 | 417.5 |       | 417.5 |
| 77.1  | 18233 | -62.9 |       |    |      | 96  | 22 | 437.2 |       | 437.2 |
| 70.0  | 18830 | -60.9 |       |    |      | 105 | 24 | 453.8 |       | 453.8 |
| 69.9  | 18839 | -60.7 |       |    |      | 105 | 24 | 454.4 |       | 454.4 |
| 63.7  | 19415 | -63.7 |       |    |      | 98  | 25 | 460.0 |       | 460.0 |
| 50.6  | 20845 | -59.7 |       |    |      | 81  | 29 | 500.7 |       | 500.7 |
| 50.0  | 20920 | -59.5 |       |    |      | 80  | 29 | 502.8 |       | 502.8 |
| 47.6  | 21227 | -59.9 |       |    |      |     |    | 509.0 |       | 509.0 |

## Station information and sounding indices

Station identifier: XMR  
 Station number: 74794  
 Observation time: 150724/0000  
 Station latitude: 28.46  
 Station longitude: -80.55  
 Station elevation: 3.0  
 Showalter index: -1.94  
 Lifted index: -1.76

LIFT computed using virtual temperature: -2.04  
SWEAT index: 238.42  
K index: 35.90  
Cross totals index: 22.30  
Vertical totals index: 24.50  
Totals totals index: 46.80  
Convective Available Potential Energy: 161.65  
CAPE using virtual temperature: 233.19  
Convective Inhibition: -139.70  
CINS using virtual temperature: -118.90  
Equilibrium Level: 367.15  
Equilibrium Level using virtual temperature: 366.05  
Level of Free Convection: 703.16  
LFCT using virtual temperature: 724.47  
Bulk Richardson Number: 6.47  
Bulk Richardson Number using CAPV: 9.34  
Temp [K] of the Lifted Condensation Level: 291.83  
Pres [hPa] of the Lifted Condensation Level: 896.58  
Mean mixed layer potential temperature: 301.09  
Mean mixed layer mixing ratio: 15.44  
1000 hPa to 500 hPa thickness: 5788.00  
Precipitable water [mm] for entire sounding: 55.71

Description of the [data columns](#) or [sounding indices](#).

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Questions about the weather data provided by this site can be addressed to [Larry Oolman \(ldoolman@uwyo.edu\)](mailto:Larry.Oolman@uwyo.edu)

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