

Monthly Preliminary Geomagnetic Bulletin - JULY 2017

Coimbra Magnetic Observatory (COI, IAGA code)

$\phi = 40.222^\circ$; $\lambda = 351.578^\circ$

Observatório Geofísico e Astronómico da Universidade de Coimbra (OGAUC)

Absolute monthly means

| H (nT) | D (°) | Z (nT) | X (nT) | Y (nT) | I (°) | F (nT) |
|--------|--------|--------|--------|--------|--------|--------|
| 25717 | -2,352 | 36257 | 25695 | -1055 | 54,652 | 44451 |

Monthly daily amplitudes*

| | H (nT) | D (°) | Z (nT) | X (nT) | Y (nT) | I (°) | F (nT) |
|------|--------|-------|--------|--------|--------|-------|--------|
| mean | 37 | 7,1 | 35 | 36 | 53 | 2,8 | 35 |
| min | 12 | 4,3 | 13 | 13 | 33 | 1,4 | 8 |
| max | 106 | 10,1 | 54 | 109 | 72 | 7,7 | 74 |

Monthly maximum amplitudes*

| H (nT) | D (°) | Z (nT) | X (nT) | Y (nT) | I (°) | F (nT) |
|--------|-------|--------|--------|--------|-------|--------|
| 132 | 12,6 | 72 | 133 | 91 | 8,7 | 74 |

(*) - Based on hourly values

Geomagnetic Activity - K indices

K indices

Tri-hourly values

| Day | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 |
|-----|---|---|---|---|----|----|----|----|
| 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 2 |
| 2 | 4 | 3 | 4 | 4 | 3 | 2 | 4 | 4 |
| 3 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| 4 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 2 |
| 5 | 1 | 0 | 1 | 2 | 1 | 2 | 1 | 1 |
| 6 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 3 |
| 7 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| 8 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 |
| 9 | 4 | 4 | 2 | 5 | 2 | 4 | 4 | 4 |
| 10 | 3 | 3 | 2 | 2 | 1 | 2 | 1 | 2 |
| 11 | 2 | 3 | 3 | 2 | 2 | 2 | 1 | 2 |
| 12 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 13 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 2 |
| 14 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 1 |
| 15 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 16 | 2 | 2 | 5 | 5 | 4 | 5 | 5 | 5 |
| 17 | 3 | 4 | 3 | 4 | 5 | 4 | 1 | 1 |
| 18 | 2 | 3 | 2 | 1 | 1 | 2 | 1 | 1 |
| 19 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 |
| 20 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 |
| 21 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 |
| 22 | 3 | 2 | 4 | 4 | 2 | 3 | 3 | 2 |
| 23 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 4 |
| 24 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| 25 | 2 | 1 | 2 | 2 | 3 | 2 | 2 | 3 |
| 26 | 3 | 3 | 4 | 2 | 2 | 2 | 2 | 1 |
| 27 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 |
| 28 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 2 |
| 29 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 30 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 |
| 31 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 |

ak indices (nT)

Tri-hourly values

| Day | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | Ak |
|-----|----|----|----|----|----|----|----|----|------|
| 1 | 4 | 21 | 10 | 21 | 21 | 21 | 21 | 10 | 16,1 |
| 2 | 38 | 21 | 38 | 38 | 21 | 10 | 38 | 38 | 30,1 |
| 3 | 10 | 10 | 4 | 4 | 10 | 4 | 4 | 10 | 7,0 |
| 4 | 4 | 10 | 10 | 4 | 4 | 10 | 4 | 10 | 7,0 |
| 5 | 4 | 0 | 4 | 10 | 4 | 10 | 4 | 4 | 5,1 |
| 6 | 4 | 4 | 10 | 4 | 10 | 10 | 10 | 10 | 9,1 |
| 7 | 10 | 4 | 4 | 4 | 4 | 10 | 10 | 10 | 7,0 |
| 8 | 10 | 4 | 10 | 10 | 10 | 10 | 4 | 4 | 7,7 |
| 9 | 38 | 38 | 10 | 67 | 10 | 38 | 38 | 38 | 34,5 |
| 10 | 21 | 21 | 10 | 10 | 4 | 10 | 4 | 10 | 11,2 |
| 11 | 10 | 21 | 21 | 10 | 10 | 10 | 4 | 10 | 11,9 |
| 12 | 4 | 4 | 4 | 4 | 4 | 10 | 4 | 4 | 4,9 |
| 13 | 4 | 4 | 10 | 10 | 10 | 10 | 4 | 10 | 7,7 |
| 14 | 4 | 4 | 4 | 4 | 0 | 10 | 10 | 4 | 5,1 |
| 15 | 4 | 4 | 4 | 4 | 4 | 10 | 4 | 4 | 4,9 |
| 16 | 10 | 10 | 67 | 67 | 38 | 67 | 67 | 67 | 49,2 |
| 17 | 21 | 38 | 21 | 38 | 67 | 38 | 4 | 4 | 28,9 |
| 18 | 10 | 21 | 10 | 4 | 4 | 10 | 4 | 4 | 8,4 |
| 19 | 0 | 4 | 4 | 4 | 4 | 10 | 10 | 4 | 5,1 |
| 20 | 4 | 4 | 4 | 21 | 10 | 21 | 21 | 21 | 13,3 |
| 21 | 21 | 21 | 21 | 10 | 21 | 21 | 10 | 21 | 18,2 |
| 22 | 21 | 10 | 38 | 38 | 10 | 21 | 21 | 10 | 21,0 |
| 23 | 21 | 10 | 21 | 21 | 21 | 10 | 10 | 38 | 20,3 |
| 24 | 21 | 10 | 10 | 10 | 10 | 10 | 21 | 21 | 14,0 |
| 25 | 10 | 4 | 10 | 10 | 21 | 10 | 10 | 21 | 11,9 |
| 26 | 21 | 21 | 38 | 10 | 10 | 10 | 10 | 4 | 15,4 |
| 27 | 4 | 10 | 10 | 4 | 10 | 10 | 10 | 10 | 8,4 |
| 28 | 4 | 4 | 4 | 4 | 10 | 21 | 21 | 10 | 9,8 |
| 29 | 4 | 0 | 4 | 4 | 4 | 4 | 4 | 4 | 3,7 |
| 30 | 4 | 4 | 4 | 4 | 4 | 4 | 10 | 0 | 4,4 |
| 31 | 4 | 4 | 10 | 4 | 4 | 10 | 4 | 4 | 5,6 |

Monthly mean of the daily equivalent amplitude Ak:

13,1

| K values: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|------------|------|-------|-------|-------|------|------|------|------|------|------|
| Freq. (N): | 5 | 90 | 86 | 42 | 18 | 7 | 0 | 0 | 0 | 0 |
| Freq. (%): | 2,02 | 36,29 | 34,68 | 16,94 | 7,26 | 2,82 | 0,00 | 0,00 | 0,00 | 0,00 |

Classification of days

| | Quiet | | | | | Disturbed | | | | |
|---------------------|-------|----|----|----|----|-----------|----|----|----|-----|
| | Q1 | Q2 | Q3 | Q4 | Q5 | D1 | D2 | D3 | D4 | D5 |
| Coimbra (local K): | 29 | 30 | 12 | 15 | 5 | 16 | 9 | 2 | 17 | 22 |
| International (Kp): | 5 | 14 | 8 | 31 | 15 | 16 | 17 | 9 | 2* | 22* |

Principal Magnetic Storms

| Storminess period | | | | | Commencement | | | Maximum activity | | | Range | | | |
|-------------------|------|-----|-----|------|--------------|-----------|-------|------------------|-----|---|--------|-------|--------|--------|
| Begin | | | End | | Type | Amplitude | | Day | 3hp | K | H (nT) | D (°) | Z (nT) | |
| Day | hour | min | day | hour | | H (nT) | D (°) | | | | | | | Z (nT) |
| 16 | 6 | 0 | 17 | 18 | SSC | 47 | 2,5 | 6 | 16 | 4 | 5 | 142 | 12,3 | 65 |

SSC: storm sudden commencement;

3hp: daily 3-hour period of maximum activity; K: maximum local index

Questions can be addressed to: Paulo Ribeiro; e-mail: pribeiro@ci.uc.pt
OGAUC - Av. Dr. Dias da Silva 3800-134 Coimbra - PORTUGAL