

Figure 1 displays eight panels (a-h) showing various data from the TREx mission, plotted against Time (04:00:00 to 04:30:00).

- (a) DC Magnetic Field: Shows the magnetic field components B_x (blue), B_y (orange), B_z (green), and the total field $|B|$ (black dashed line). The y-axis is B [nT].
- (b) DC magnetic field inclination: Shows the inclination $|B_z|/\sqrt{B_x^2 + B_y^2}$ (black line). The y-axis is $|B_z|/\sqrt{B_x^2 + B_y^2}$.
- (c) Ion Flows: Shows the ion flow components V_x (blue), V_y (orange), and V_z (green). The y-axis is V_i [km/s].
- (d) Energetic Electrons: A heatmap showing the electron flux (color scale, 10^4 to 10^6 $\text{eV}/(\text{cm}^2 \text{ s sr eV})$) as a function of Energy [keV] (log scale, 10^1 to 10^2) and Time.
- (e) Low-energy Electrons: A heatmap showing the electron flux (color scale, 10^6 to 10^8 $\text{eV}/(\text{cm}^2 \text{ s sr eV})$) as a function of Energy [keV] (log scale, 10^{-1} to 10^1) and Time.
- (f) Magnetic Field Waves: Shows the wave power B_w [Hz] (color scale, 10^{-10} to 10^{-5} nT^2/Hz) and the wave frequency f_{ce} (solid white line), $f_{ce}/2$ (dashed white line), and $f_{ce}/10$ (dotted white line). The y-axis is B_w [Hz].
- (g) Electric Field Waves: Shows the wave power E_w [Hz] (color scale, 10^{-10} to 10^{-7} $\text{mV/m}^2/\text{Hz}$) and the wave frequency f_{ce} (solid white line), $f_{ce}/2$ (dashed white line), and $f_{ce}/10$ (dotted white line). The y-axis is E_w [Hz].
- (h) TREx-RGB GILL & PINA keogram: A grayscale image showing the auroral region (AACGM λ [°] vs. Time).

Time (04:00:00 to 04:30:00) is shown at the bottom of the panels. The x-axis labels are: 04:00:00, 04:05:00, 04:10:00, 04:15:00, 04:20:00, 04:25:00, 04:30:00.

Time	R	X [Re]	Y [Re]	Z [Re]
04:00:00	7.9	-6.7	4.0	0.7
04:05:00	8.0	-6.9	4.0	0.7
04:10:00	8.1	-7.0	4.0	0.7
04:15:00	8.2	-7.1	4.0	0.7
04:20:00	8.3	-7.2	4.0	0.7
04:25:00	8.4	-7.3	4.0	0.7
04:30:00	8.5	-7.5	4.0	0.7

Time	04:00:00	04:05:00	04:10:00	04:15:00	04:20:00	04:25:00	04:30:00
R	7.9	8.0	8.1	8.2	8.3	8.4	8.5
X [Re]	-6.7	-6.9	-7.0	-7.1	-7.2	-7.3	-7.5
Y [Re]	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Z [Re]	0.7	0.7	0.7	0.7	0.7	0.7	0.7