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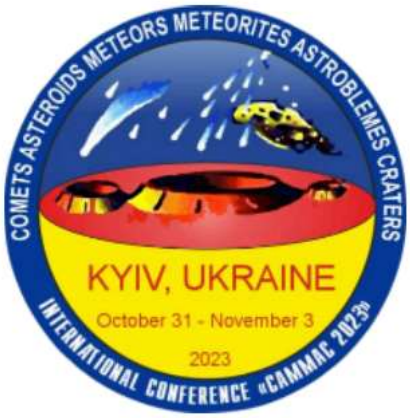

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400 to 200 cm. The dust color did not change that much and rapidly. There is only a slight bluing at the perihelion.

MAGNETIC FIELDS MEASURED BY D1, D2, D3, AND NiI LINES NEAR A SEISMIC SOURCE OF A POWERFUL SOLAR FLARE

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We present the results of magnetic field measurements using the NaI D1, D2, HeI D3, and NiI 5892.9 Å lines for the area in the vicinity of a seismic source of a powerful solar flare that occurred on October 28, 2003, of X17.2/4B class. For the D1, D2, and D3 lines, the magnetic fields in the flare on this date were determined by the splitting of emission peaks. In contrast, for the NiI line, the magnetic fields were deduced from the splitting of the Fraunhofer profiles.

The magnetic fields measured by the NaI D1 and D2 lines were 910 G and 840 G respectively, with an estimated measurement error of 70 G. As D1 and D2 lines form in identical regions within the flares, such a close match validates the reliability of the provided magnetic field estimates for the lower chromosphere. For the NiI 5892.9 Å line, which corresponds to the photosphere level, measurements showed a value of 80 G. This suggests a positive magnetic field gradient, indicating a complex magnetic structure within the flare.

In the HeI D3 line profiles, beyond the anticipated intensive core emission, we observed a remarkable polarization of up to 4%. This polarization persisted over a wide -5…10 Å range surrounding the main emission core. Magnetic fields deduced from the centroid splitting of the core of the D3 line suggest magnitudes of 1-1.5 kG. The highly-polarized features in the Stokes V profiles could imply even stronger magnetic

fields. Notably, despite its complex shape, the averaged Stokes V profile within this feature reverses its sign as it passes through the core emission wavelength.

If such polarization is interpreted as a manifestation of Zeeman splitting, it would suggest a magnetic field intensity that's two orders of magnitude higher. This unusual profile shape likely arises from significant factors in the seismic source region, possibly including descending plasma velocities surpassing 400 km s^{-1} and potentially super-strong magnetic fields.

UNIDENTIFIED AERIAL PHENOMENA. TWO-SIDE OBSERVATIONS OF EVENTS

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NASA commissioned a research team to study Unidentified Aerial Phenomena (UAP), observations of events that cannot scientifically be identified as known natural phenomena. The Main Astronomical Observatory of NAS of Ukraine conducts an independent study of UAP also. For UAP observations, we used two meteor stations installed in Kyiv and in the Vinarivka village in the south of the Kyiv region. Two-side monitoring of the daytime sky led to the detection of three luminous objects at an altitude of 620, 1130 and 1174 km, moving at a speed of 256, 78 and 282 km/s. We have drawn a meaningful conclusion from observations of space UAPs. They appear and disappear suddenly, and are observed on a time interval in the subsecond range. At the same time, they demonstrate unprecedented high velocities and high-frequency brightness variability. The detection of these objects is an experimental fact. Estimates of their characteristics follow from observational data. The authors do not interpret these objects.