

Dayside plasma blob: a different high-density structure from patches in the polar cap

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A new nomenclature of “dayside plasma blob/dayside blob” has been introduced to differentiate another type of enhanced density structures from polar cap patches in the polar ionosphere based on the *in situ* and ground based observations, by learning from the terminology of auroral blob, a plasma structure within the night-time auroral oval on the closed field lines. Comparing with the polar cap patches, which transported from dayside sunlit region with dense and cold plasma, the dayside blobs are associated with particle precipitations and aurora arcs in the polar cap with dense and hot plasma and strong field-aligned current. Notably, the dayside blobs cause more severe disturbances in the polar cap ionosphere for navigation signals than patches, which will be very useful to grade the importance of space weather phenomena in the polar cap.

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