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A new statistical model for plasmaspheric hiss – Preliminary results

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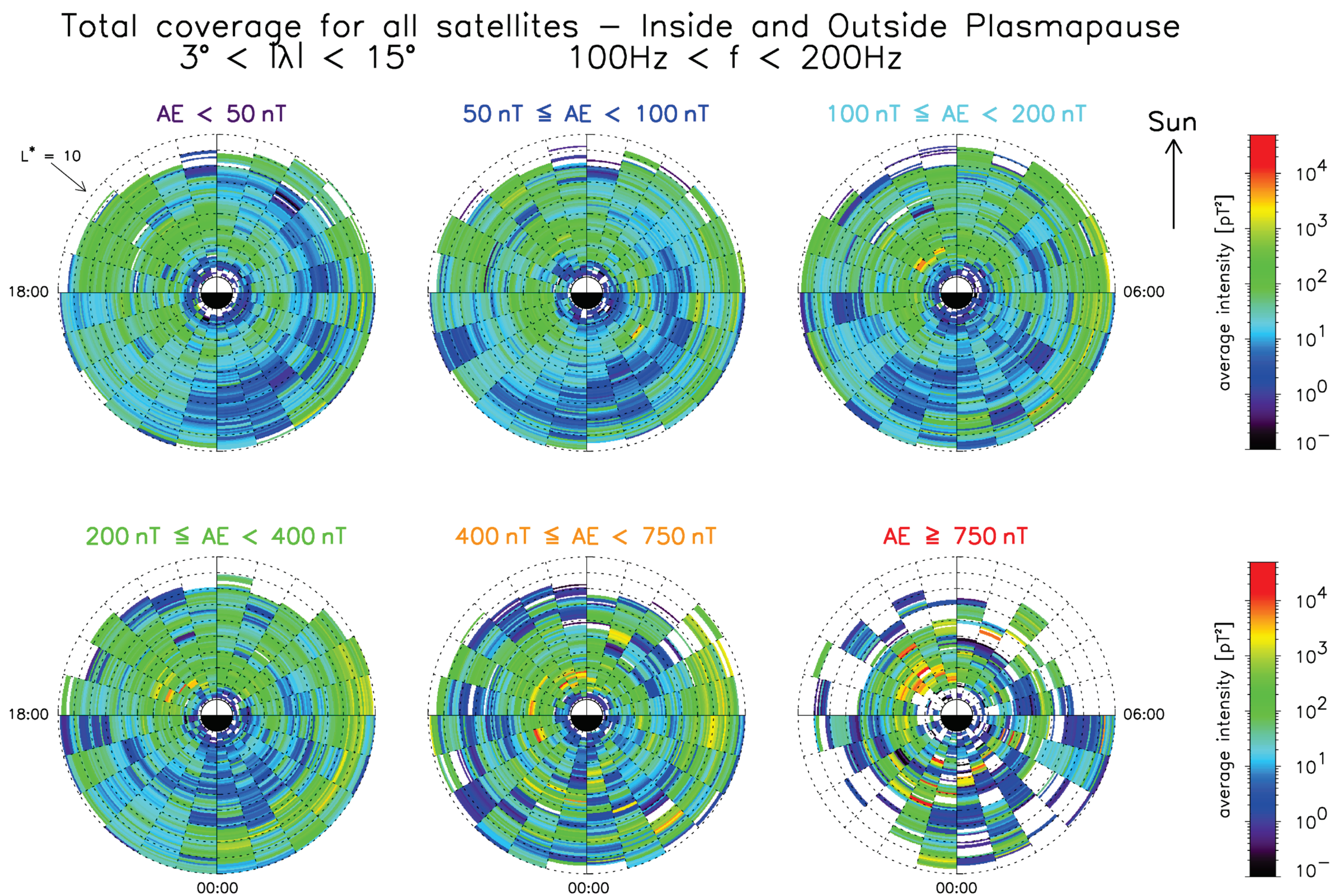
The research leading to these results funded in part by the European Union Seventh Framework Programme (FP7) under grant agreement No 606716 SPACESTORM

IWEPPNES Workshop, Paris, France, 17/05/2015 – 23/05/2015

Average Wave Intensity



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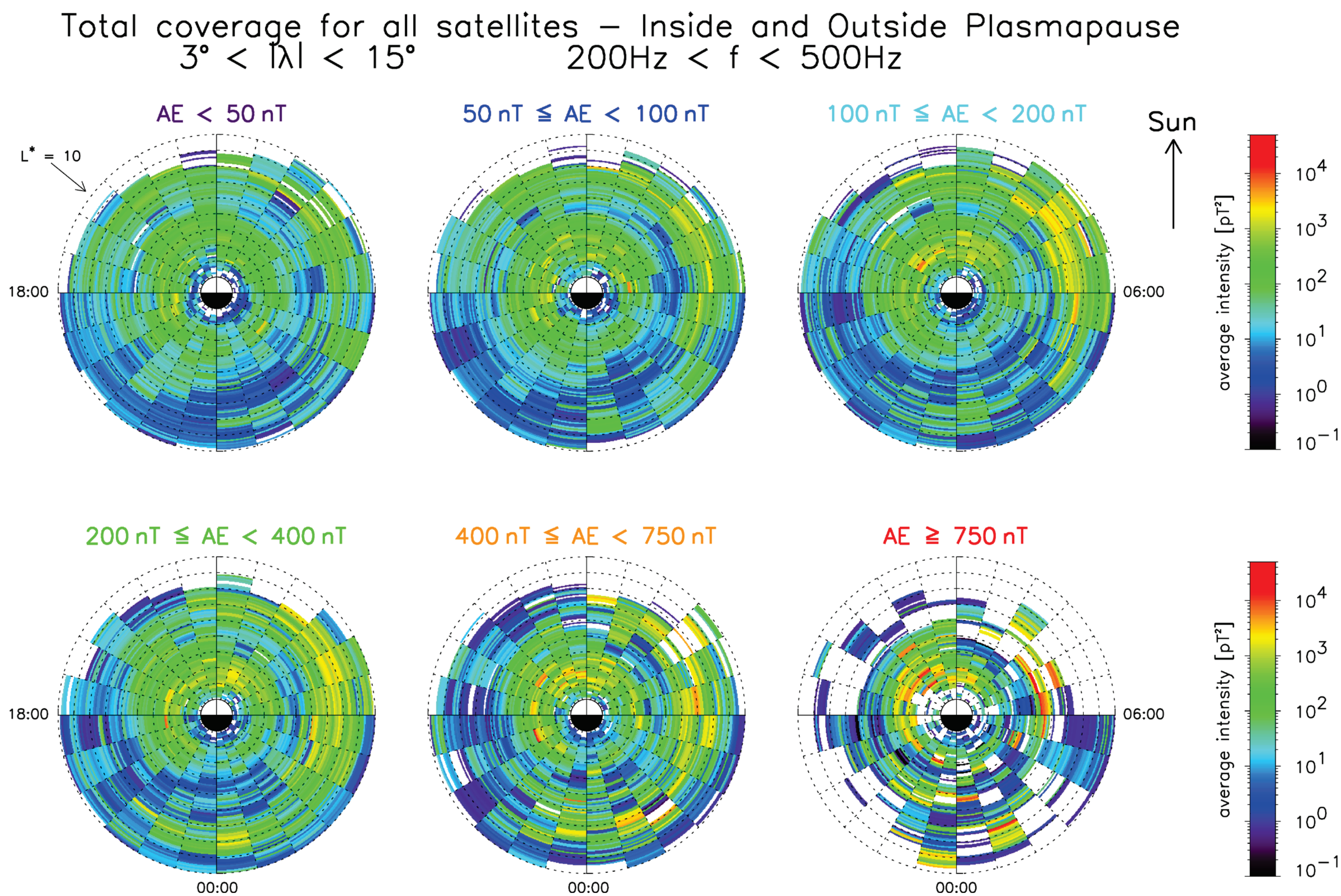

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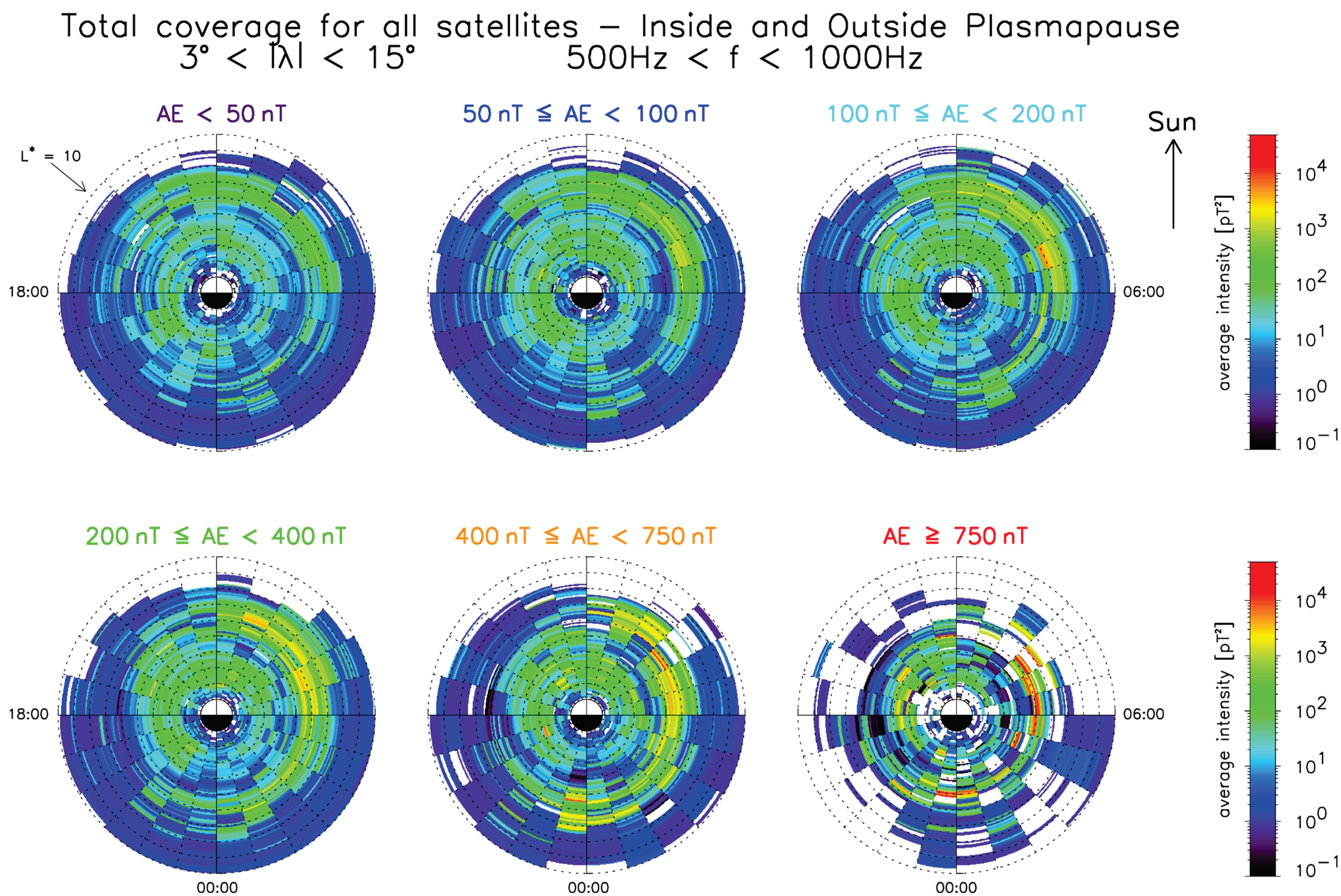

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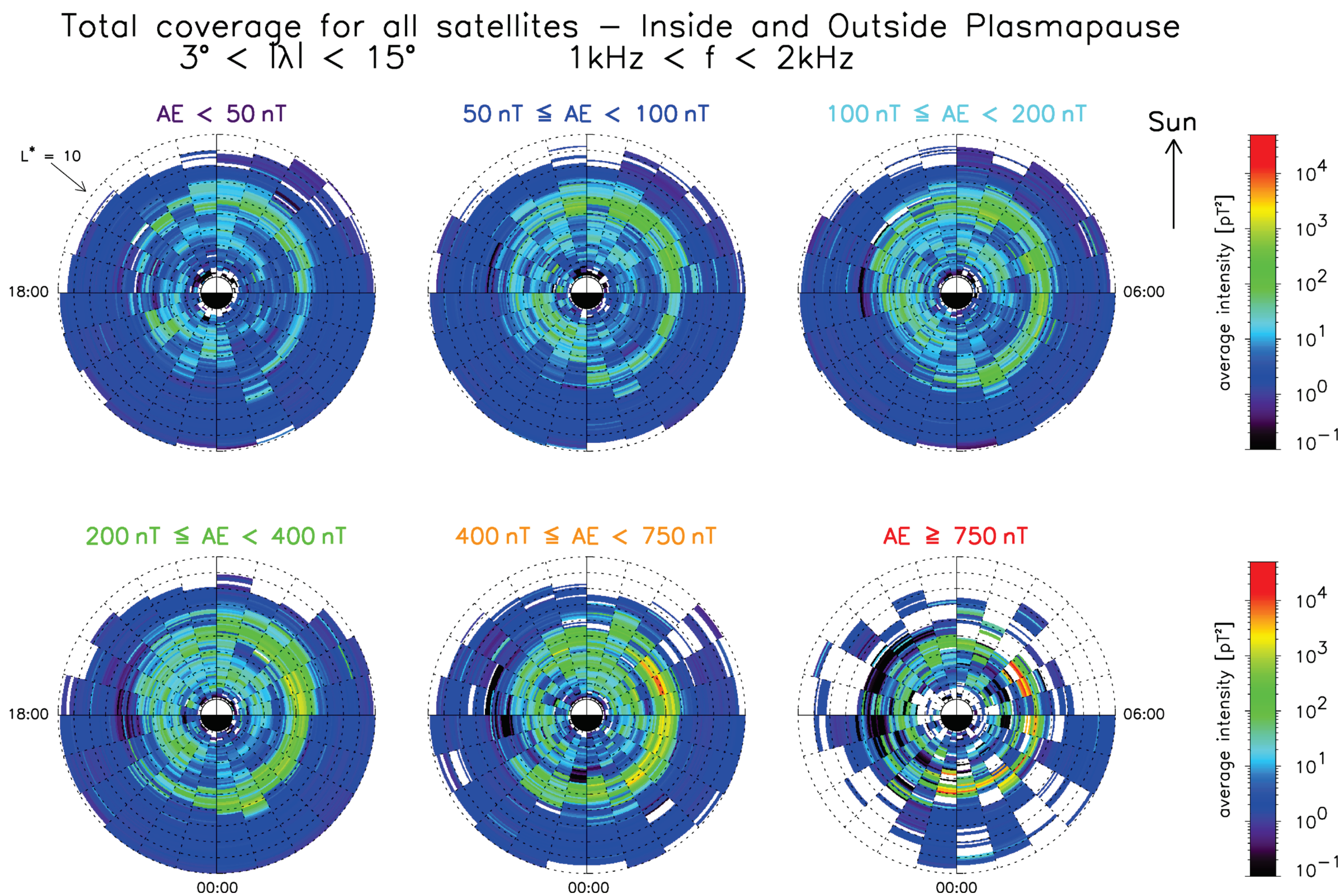

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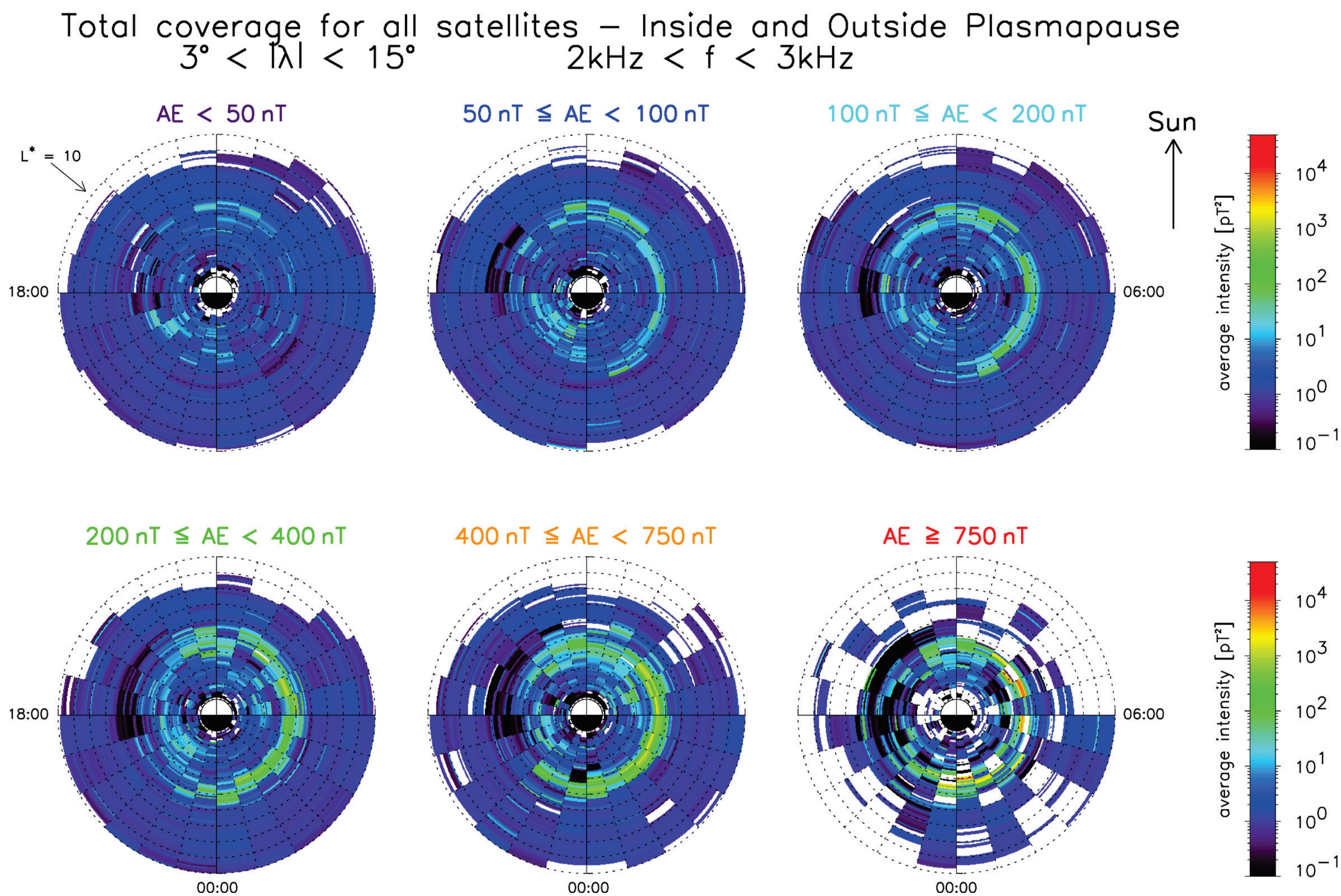

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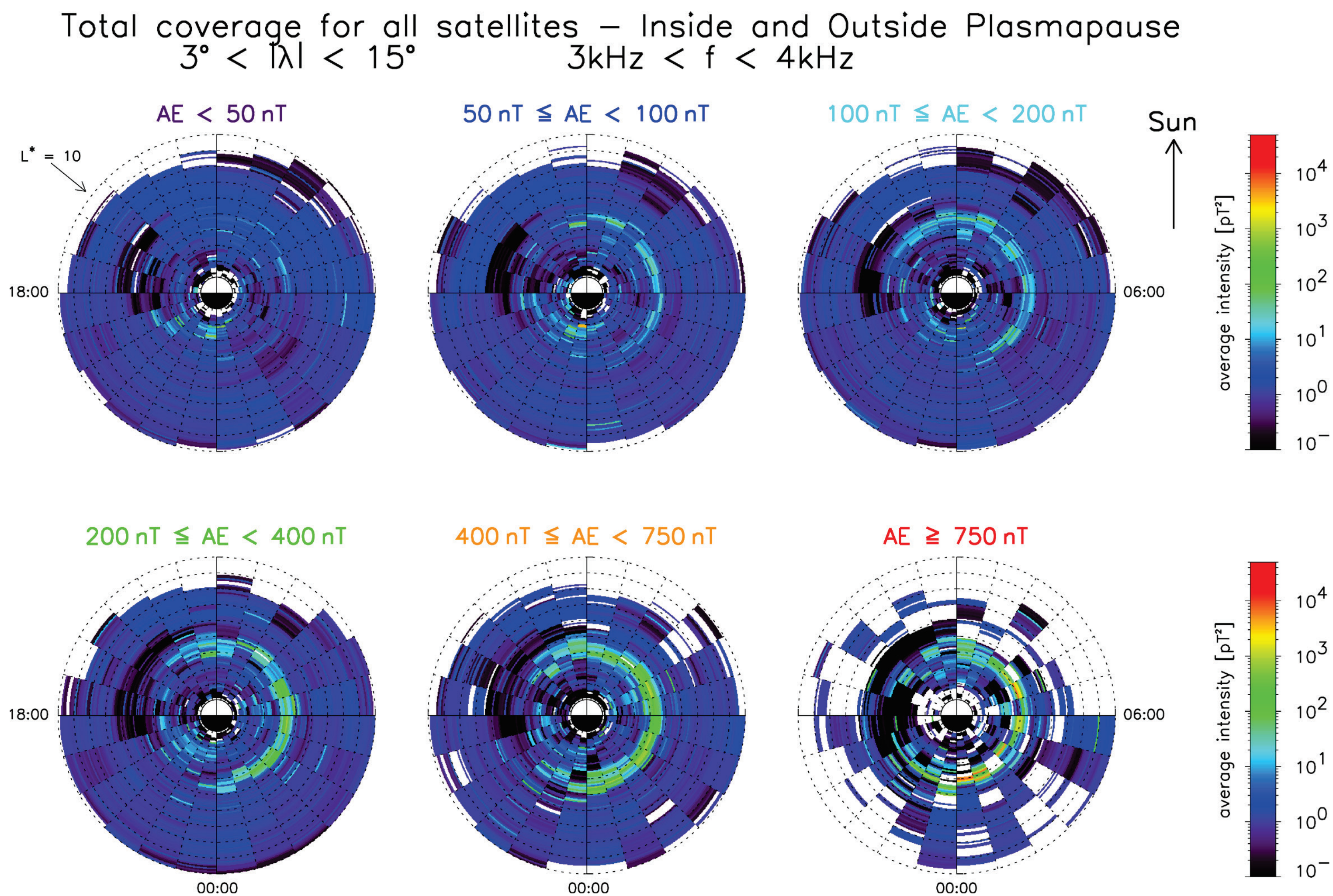

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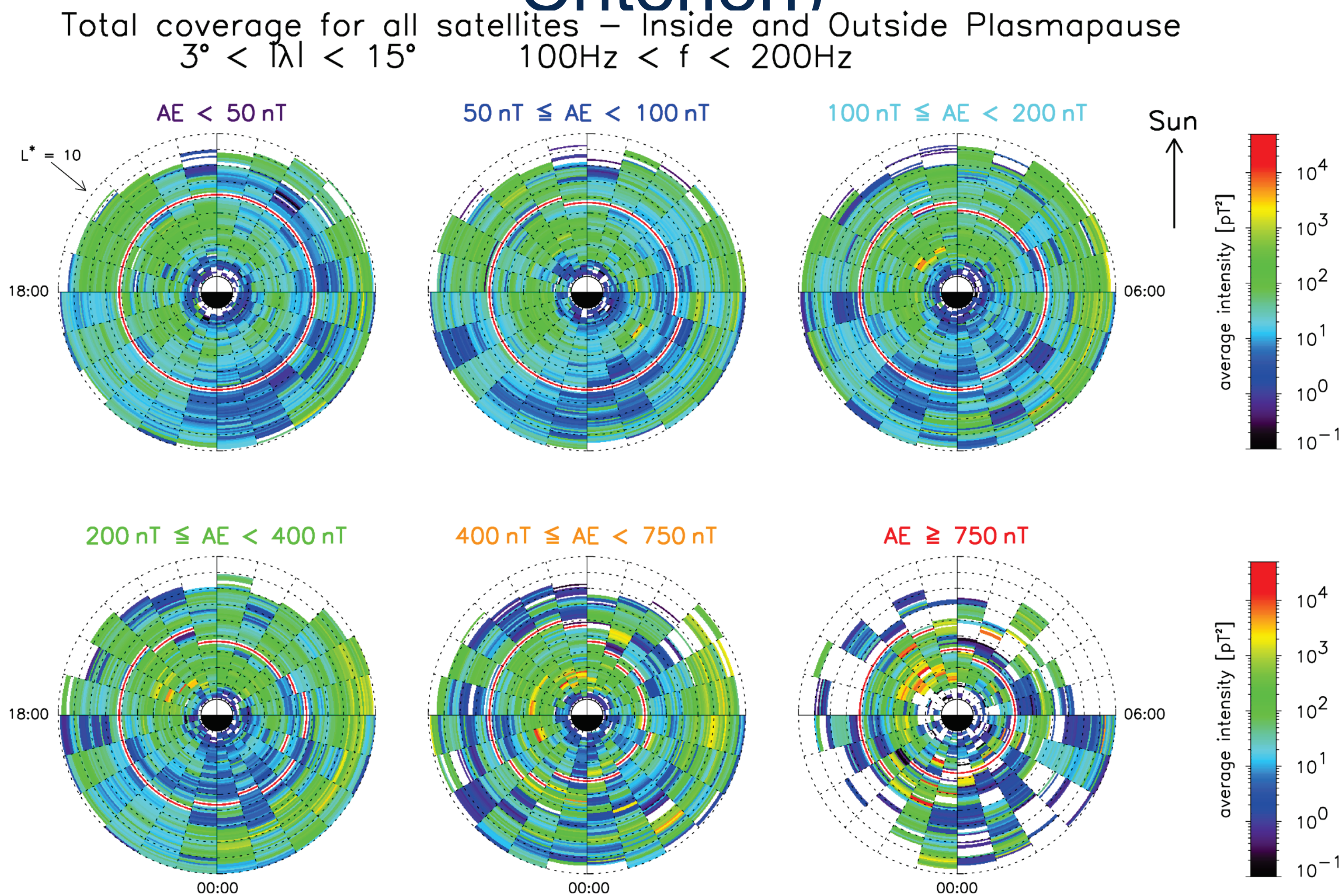
CRRES Plasmapaus Location as defined by the ECH Wave Criterion

CRRES Plasmapause Location (ECH Criterion)



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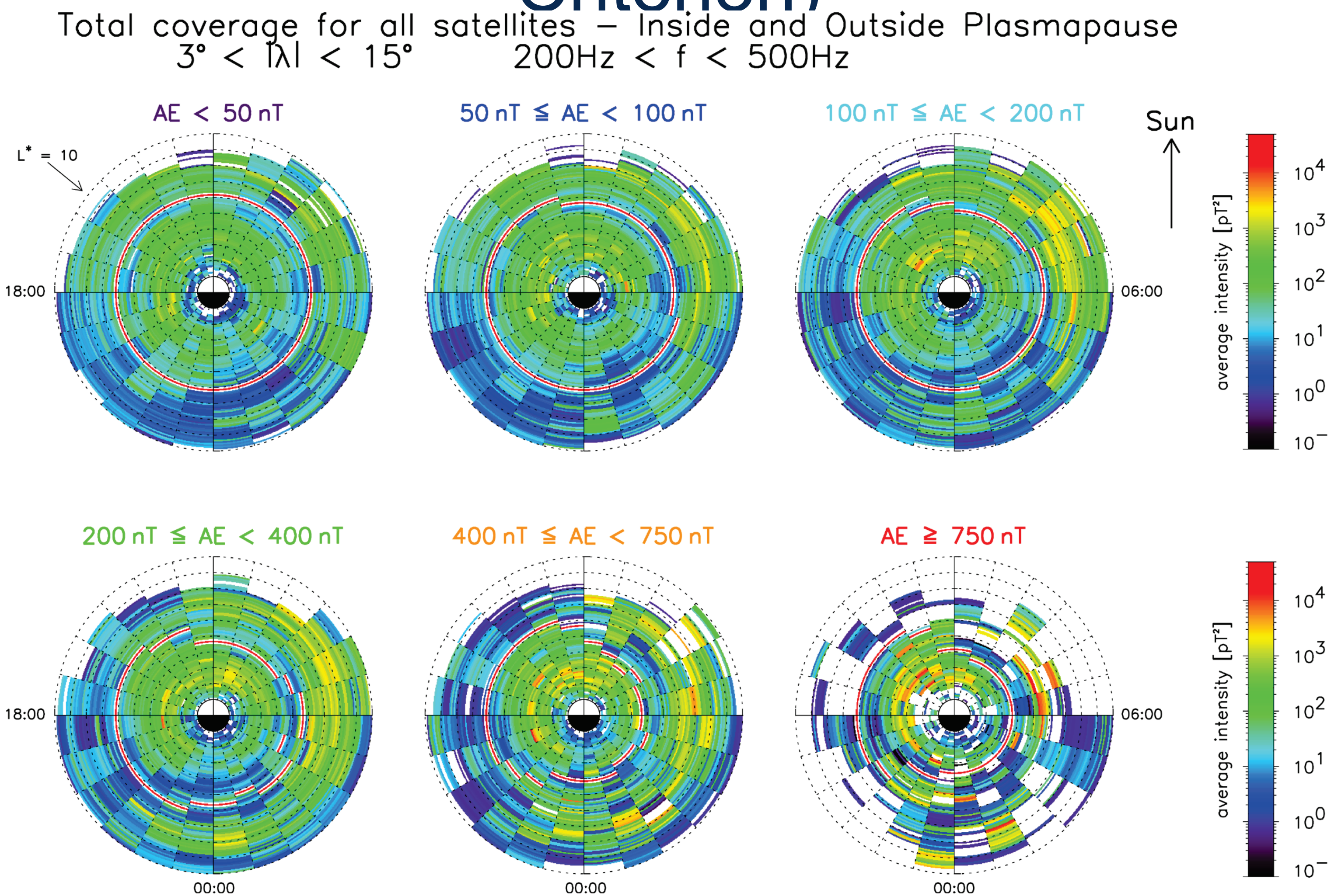

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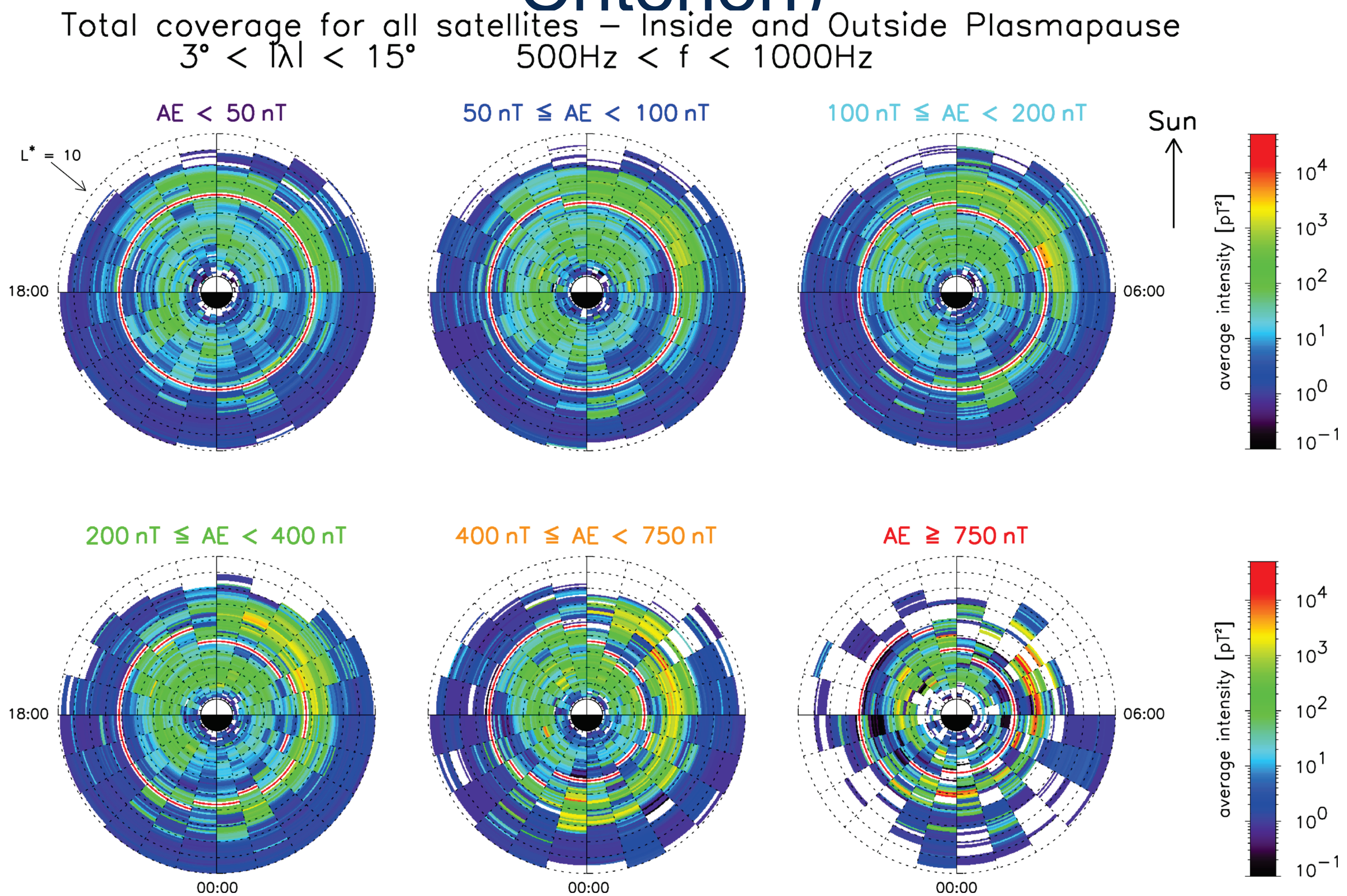

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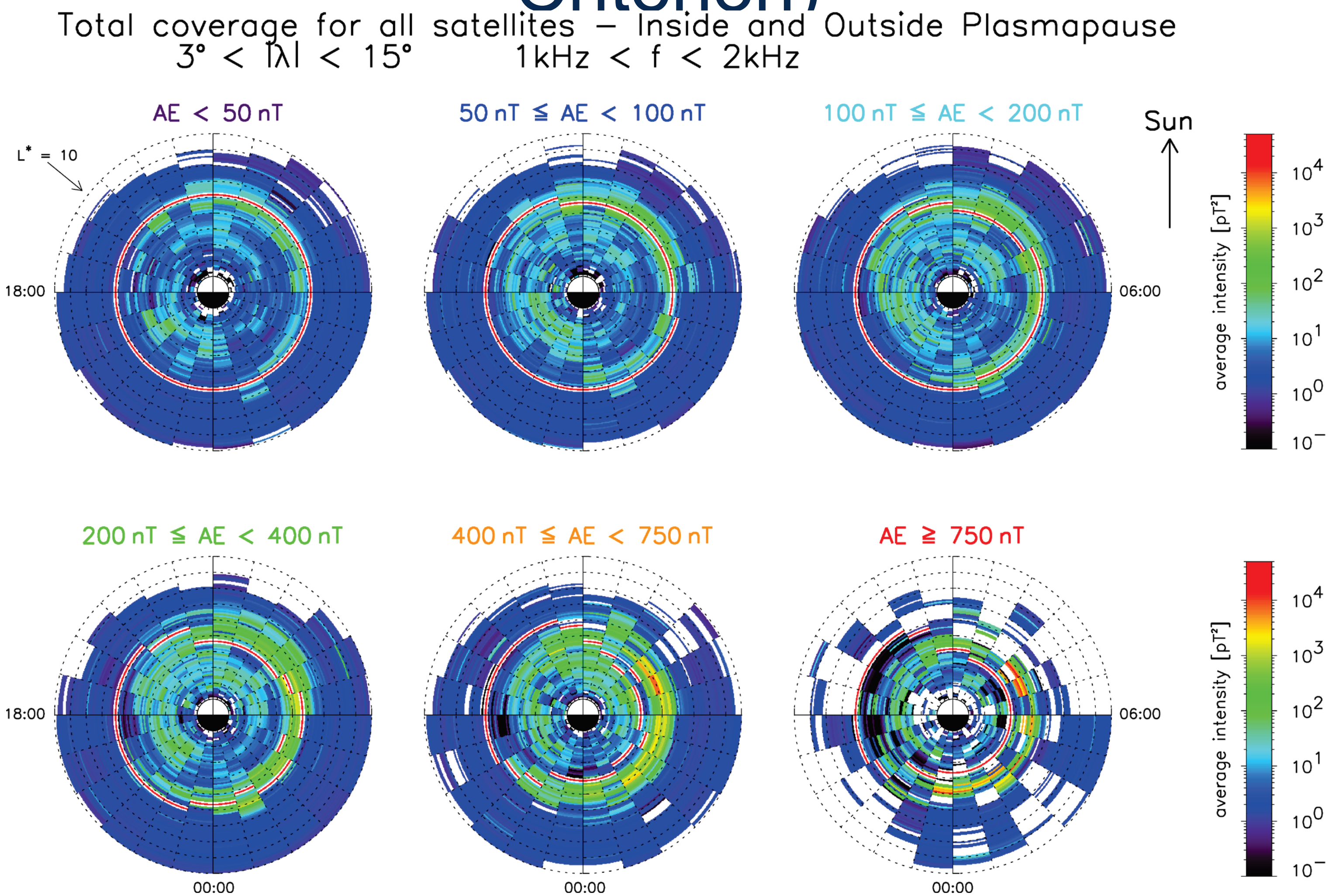

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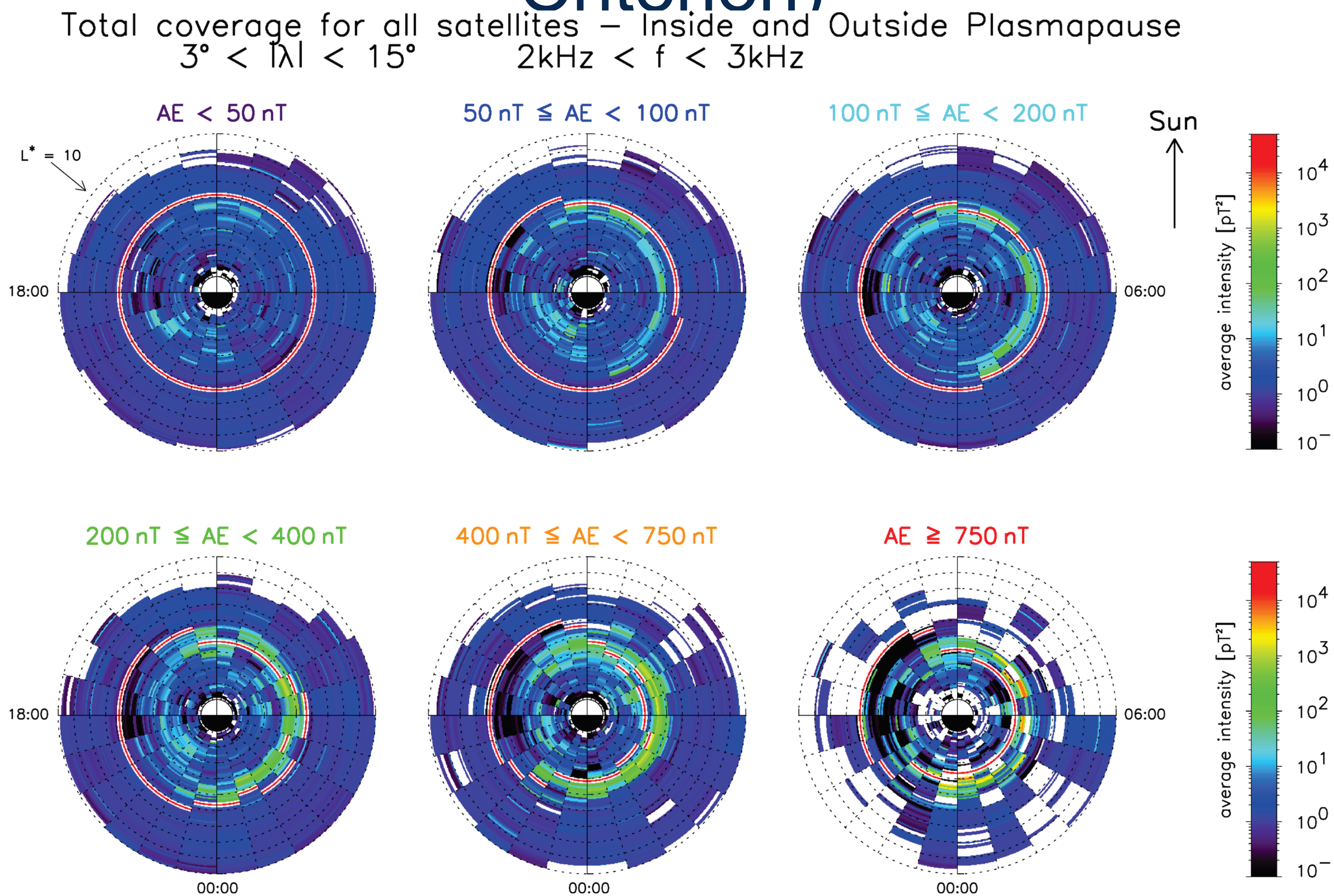

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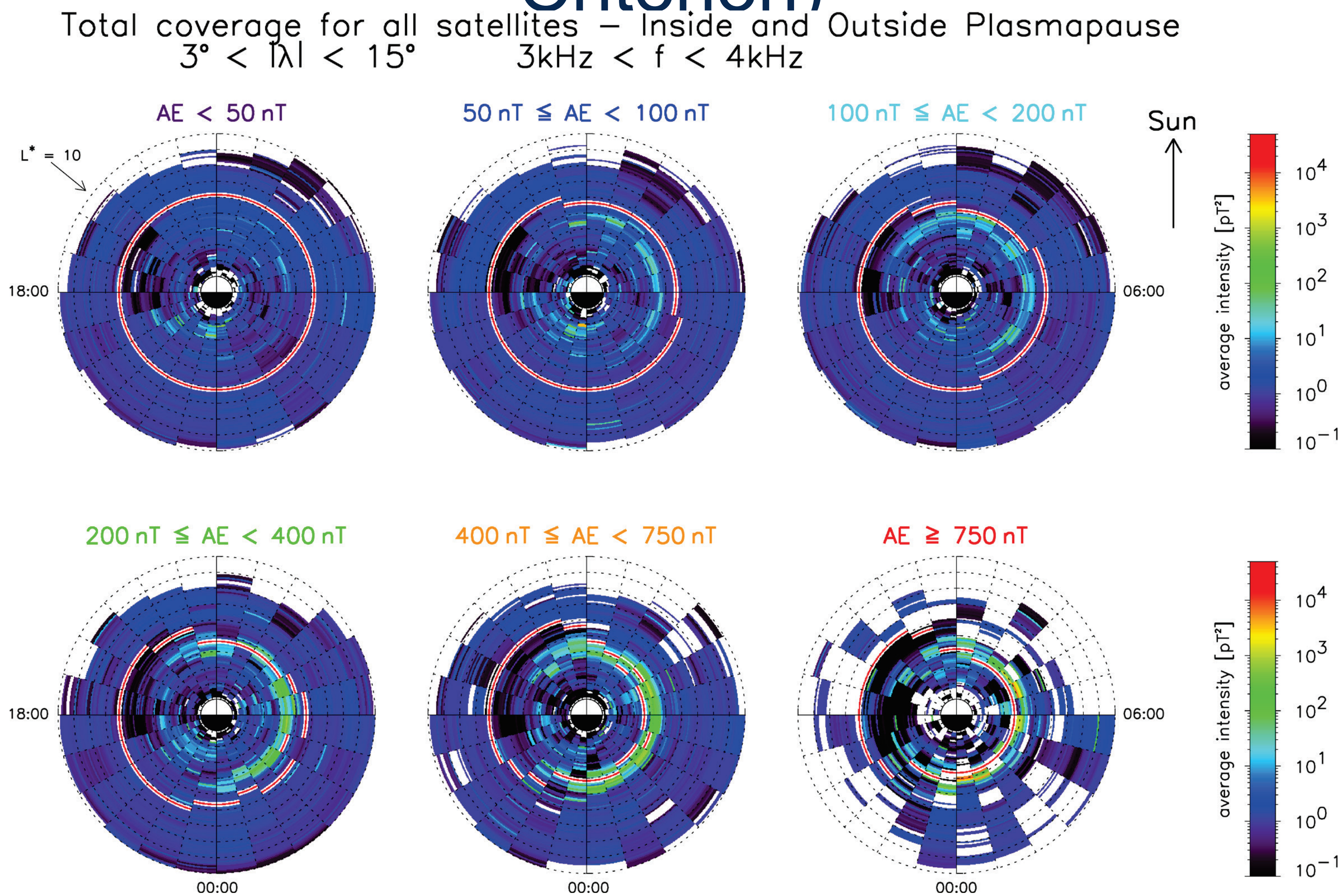

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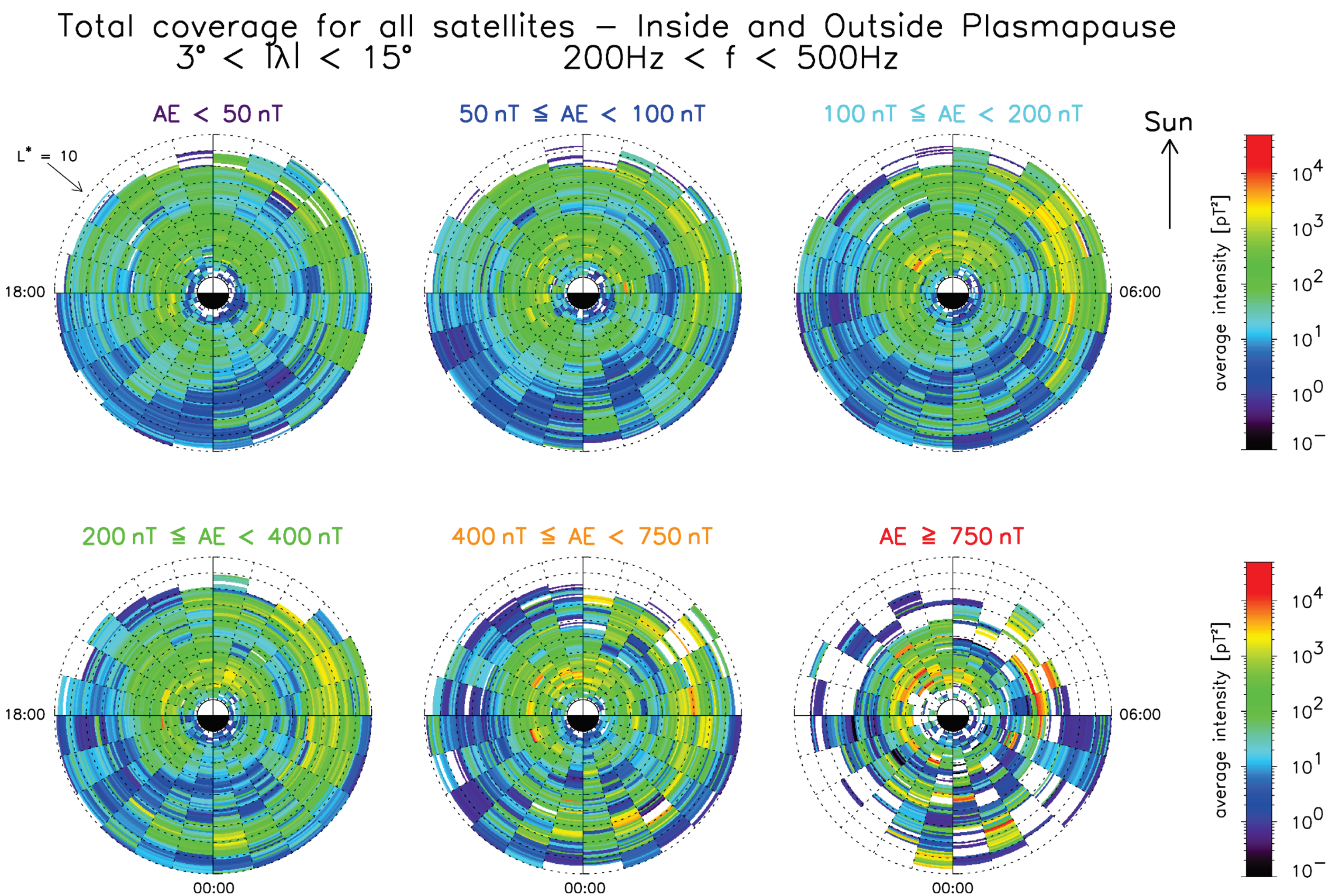
Proposed Boundary

Average Wave Intensity



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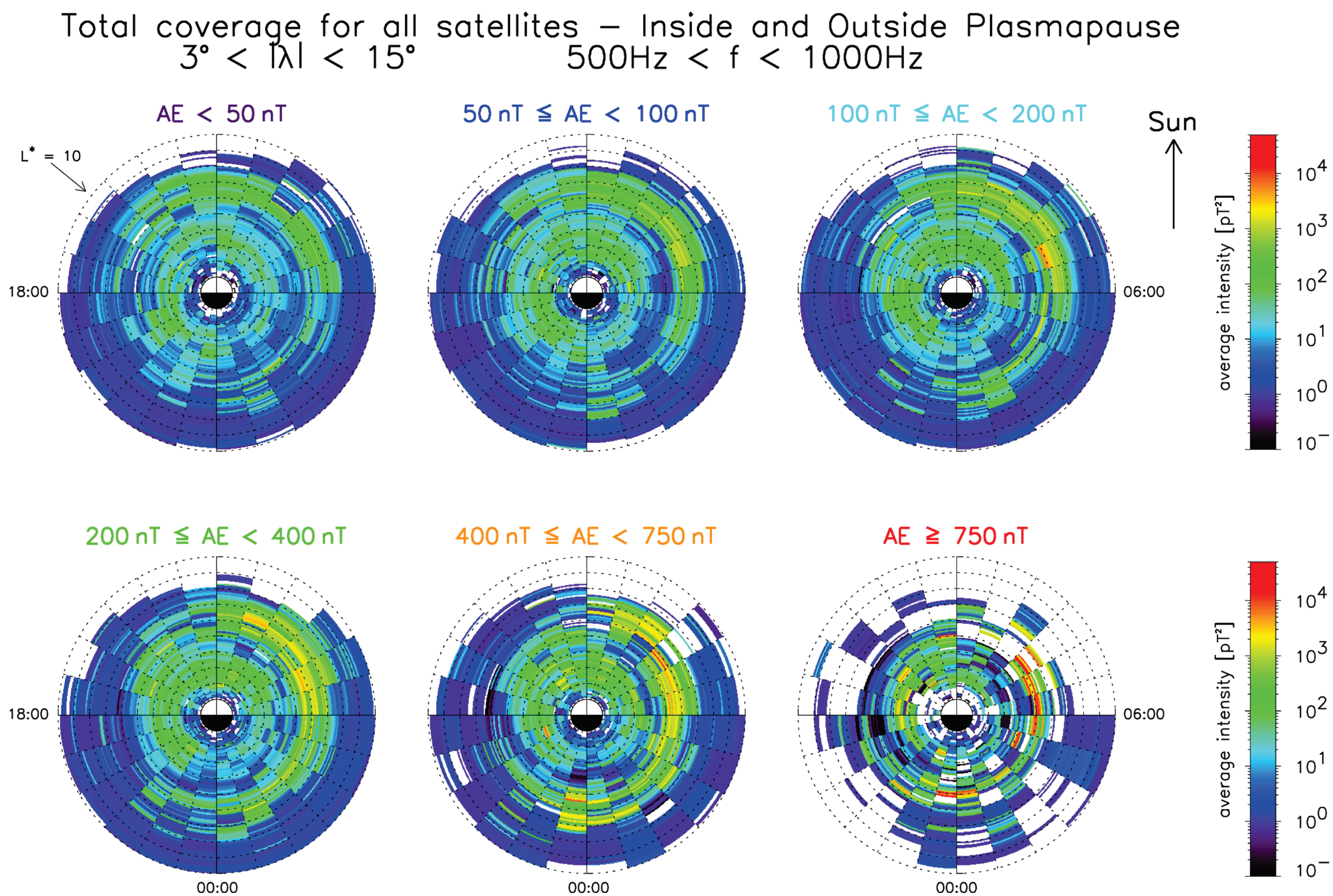

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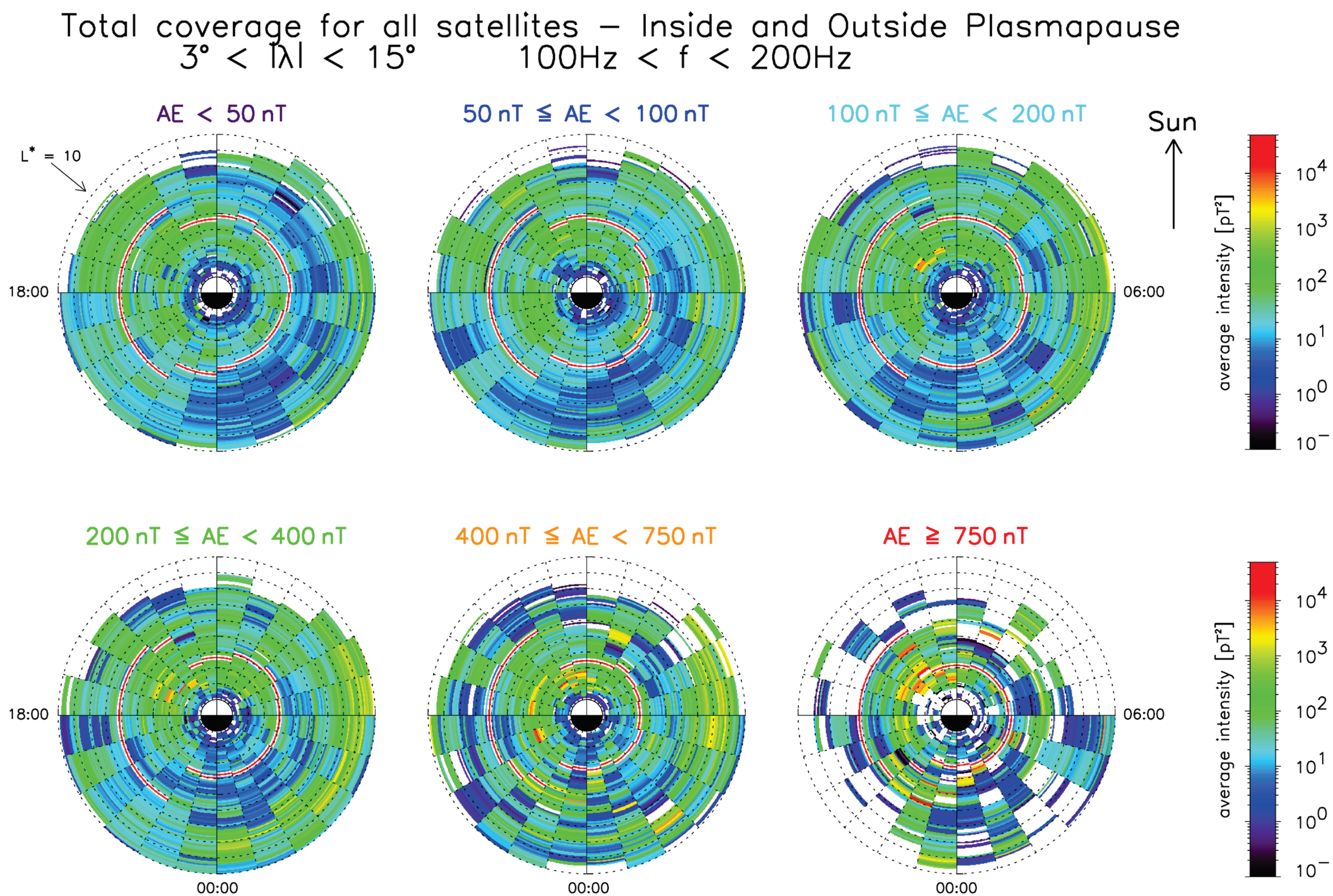
Proposed Hiss Boundary



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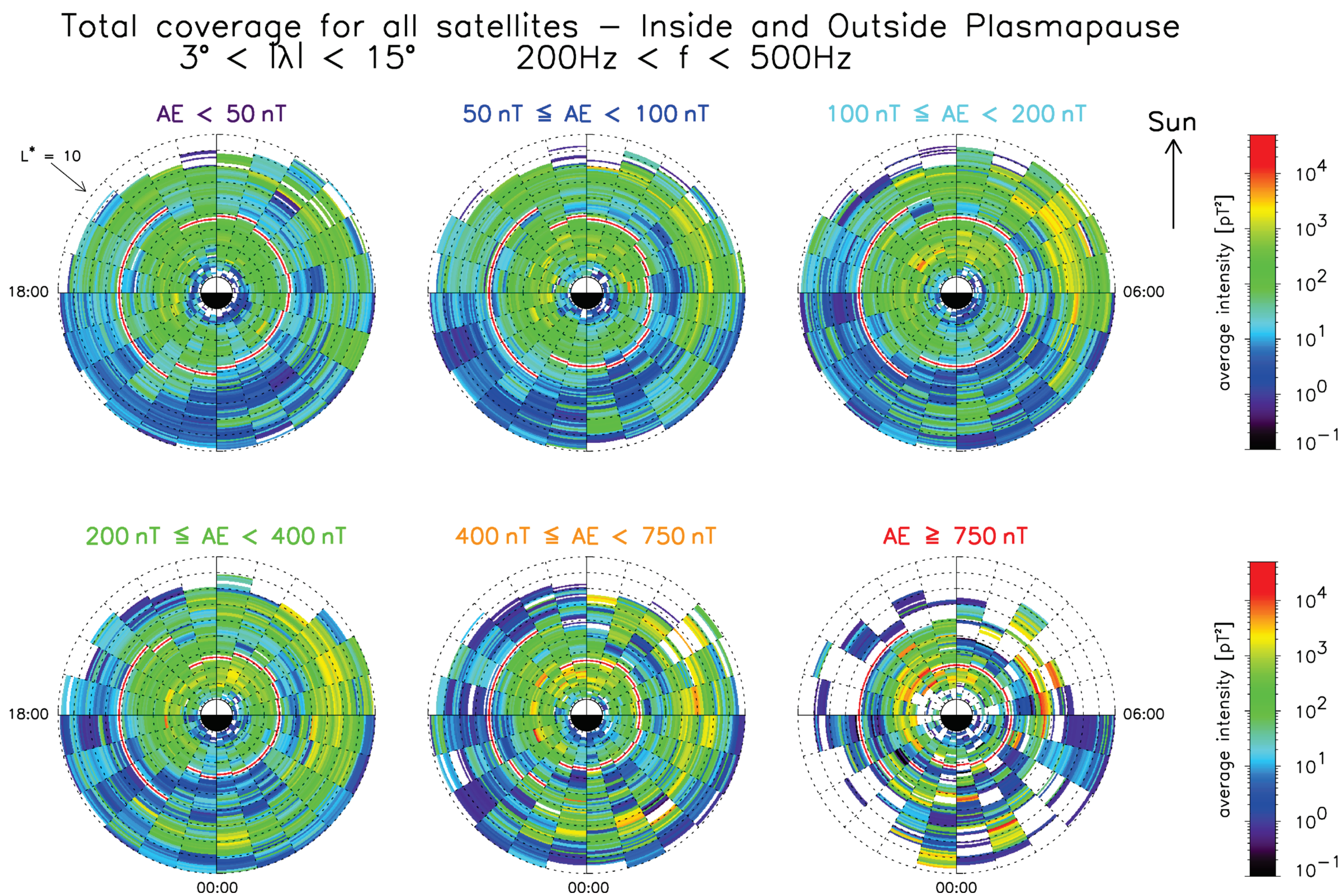

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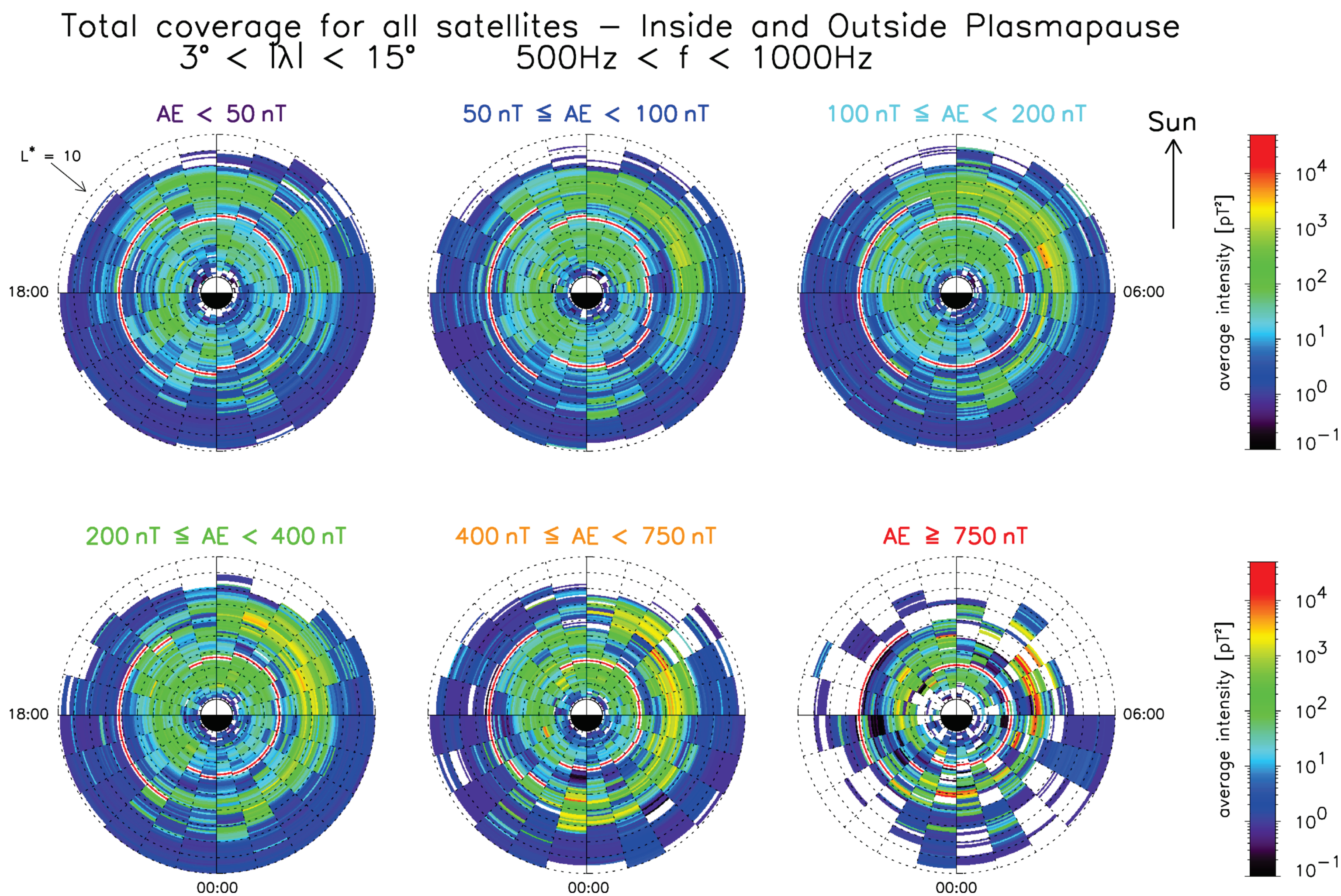

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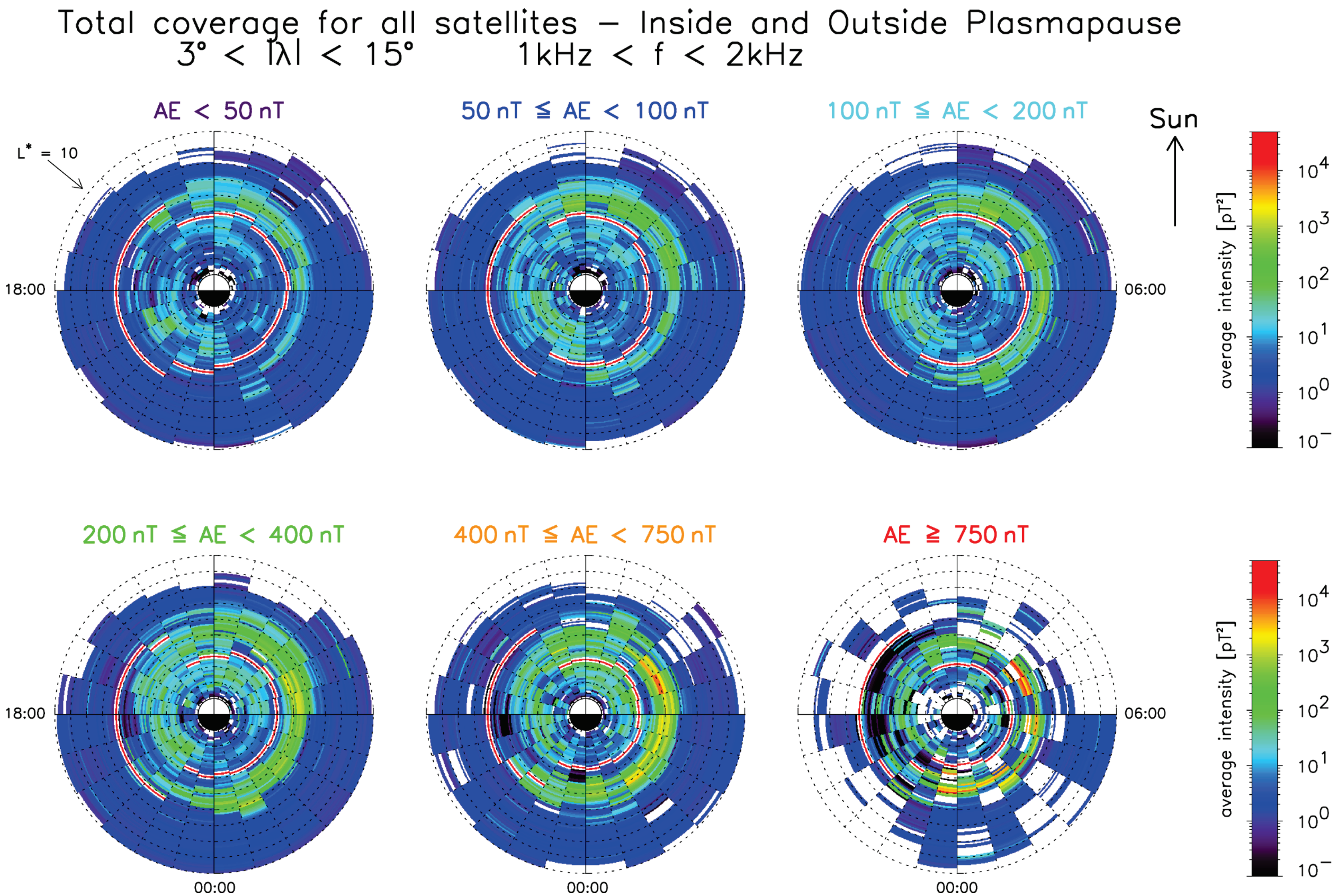

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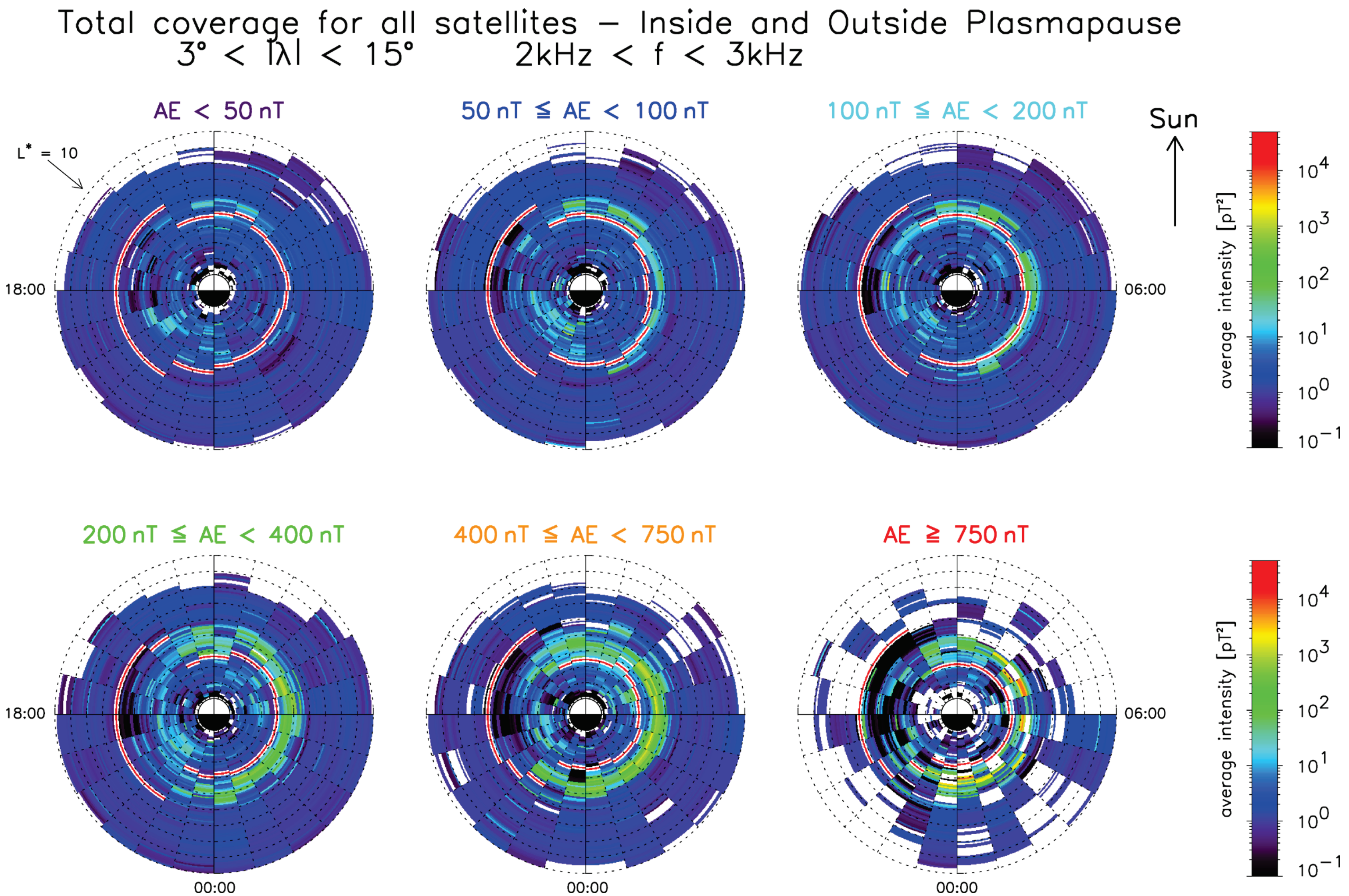

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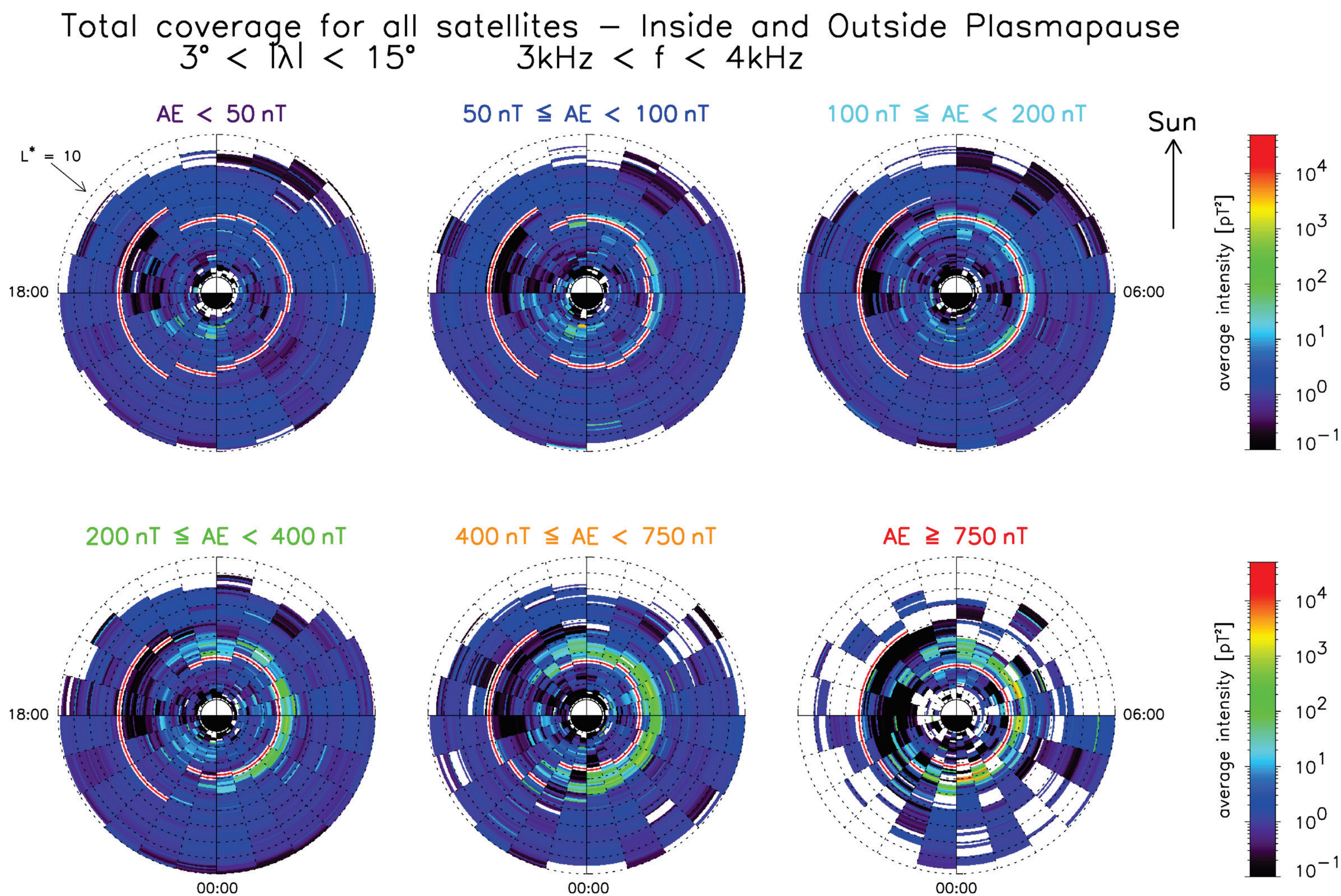

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Plasmaspheric Hiss Diffusion Rates

Plasmaspheric Hiss Diffusion Rates

- Resolution
  - 18 levels of L* (steps of 0.5)
  - 24 levels of MLT
  - 10 levels of latitude (3° -60°)
  - 6 levels of geomagnetic activity (AE and Kp)

- WNA peak and width taken from data by Agapitov[2013]

- Plasma Density Model derived from CRRES data

- Diffusion rates modelled using the data directly, no fits

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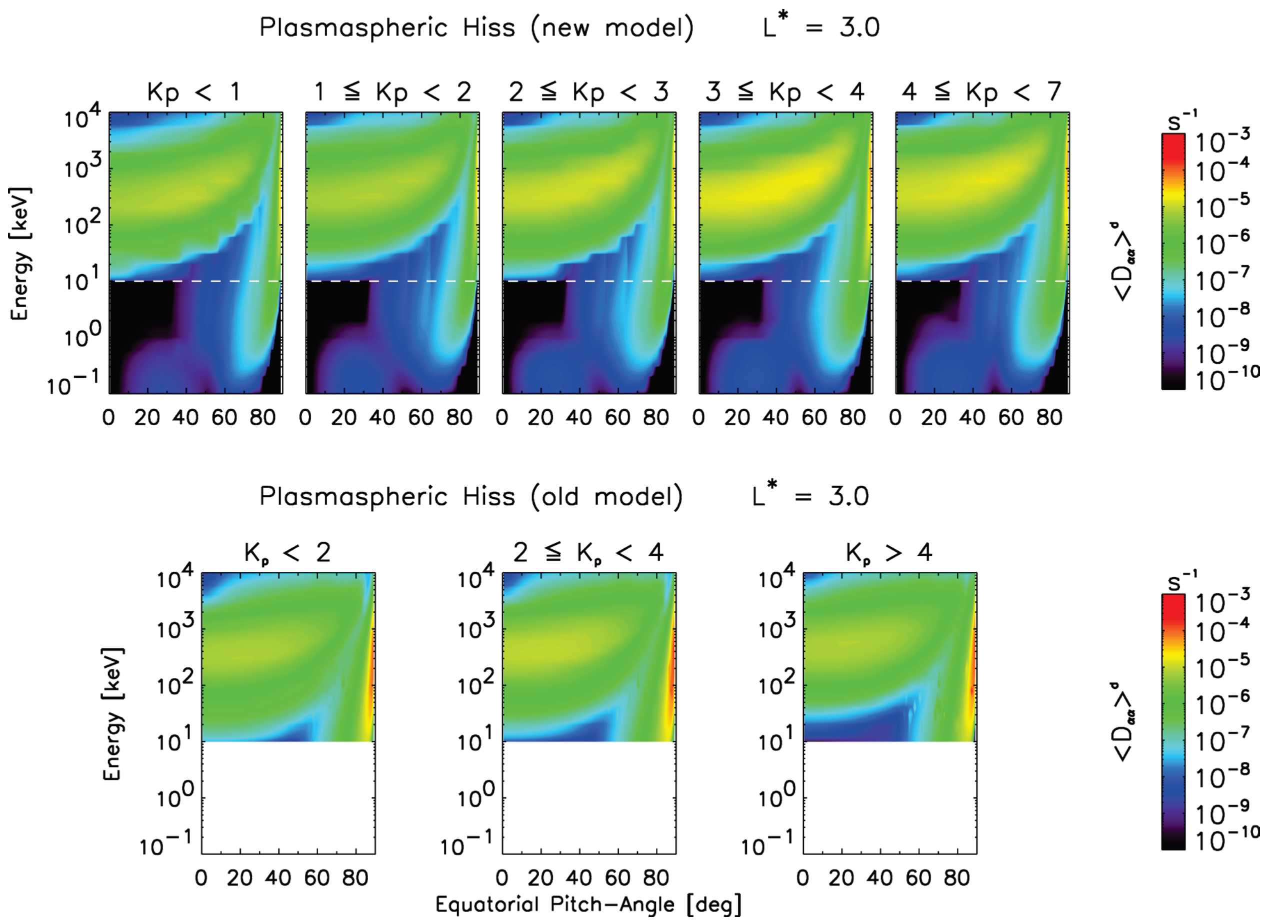
Plasmaspheric Hiss Diffusion Rates



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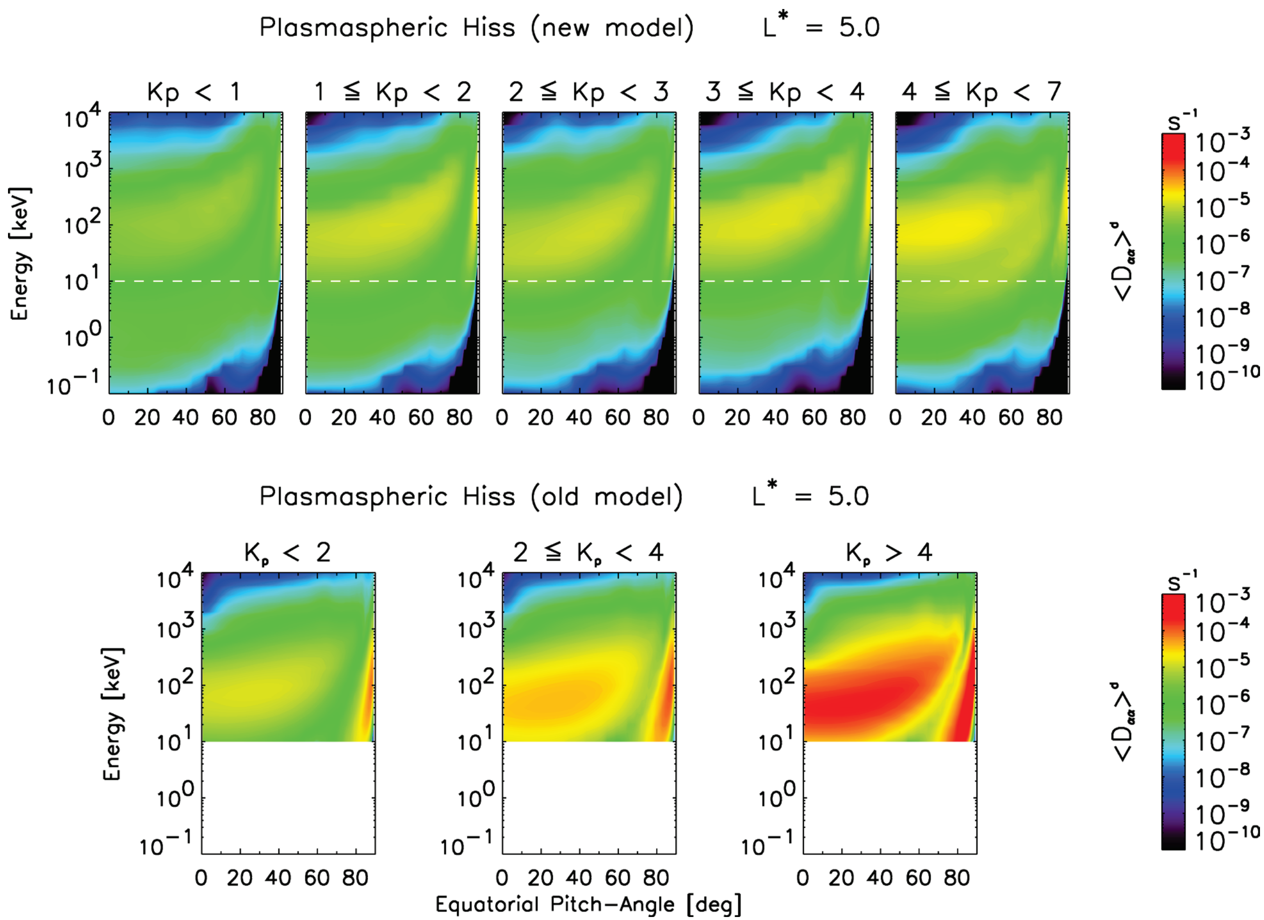

Acknowledgements

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