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Conjugate study of a THEMIS substorm event on January 5 2008

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THEMIS has entered its first prime tail season. A number of substorms have been observed by THEMIS spacecraft and Ground-based Observatories (GBO) during its major conjunctions or minor conjunctions. One interesting event was recorded by THEMIS in January 5, 2008 during which the four THEMIS spacecraft THB, THC, THD and THE were aligned in the post-midnight sector. Tail dipolarizations at these satellites were observed and used as onset signatures in space. A possible reconnection line crossing is suggested by the tailward flow on THB (the most tailward one) and earthward flows on the inner satellites. The ground-based observatories captured the corresponding auroral breakups in Alaska. The perturbations and pulsations in the ground magnetic field both at high and middle latitudes are also used to determine the ground onset of this substorm. With the extensive distribution of ground stations in the post-midnight sector and their good conjunction with spacecraft, we are able to investigate the magnetic pulsations, especially those in the Pi1 and Pi2 bands both in space and on the ground.