

共同研究課題

磁気赤道磁力計ネットワークデータのデータベース化 (2001-05) MAGDAS/CPMN/EMN データのデータベース化 (2006-10)

研究代表者 湯元清文 (2001-2003 年) (九州大学大学院理学研究院)
(2004-2010 年) (九州大学宙空環境研究センター)

研究分担者 吉川顕正 (九州大学大学院理学研究院)

研究分担者 河野英昭 (九州大学大学院理学研究院)

研究分担者 荻野竜樹 (名古屋大学太陽地球環境研究所)

研究分担者 塩川和夫 (名古屋大学太陽地球環境研究所)

研究分担者 糸長雅広 (山口大学教育学部 2004 年まで)

研究分担者 北村健太郎 (九州大学宙空環境研究センター2005 年)

研究分担者 篠原 学 (九州大学大学院理学研究院 2006-07 年)

研究分担者 阿部修司 (九州大学宙空環境研究センター2008-10 年)

1. 研究目的

九州大学は1985年から今日まで、磁気赤道域の地域でキャンペーンベースの地磁気ネットワーク観測を継続実施し、3秒値の高時間分解能データを取得してきた。1995年から2005年までの高時間分解能の膨大なデータは、特殊なカセットテープに圧縮して記録されているために、データ再生しデータベース化するのに時間が掛かり、一般の研究者が自由に利用できる状況には至っていなかった。研究課題「磁気赤道磁力計ネットワークデータのデータベース化」により、磁気赤道域の地磁気ネットワークデータのデータベース化をはかり、CD-ROMなどにより公開することによって、磁気赤道で顕著に現れるDP2、SSC、Pi 2などのULF波動のグローバルな発生特性、伝播特性に関わる研究を推進した。1996年から2005年まで、磁気赤道域と210度磁気子午線に沿った環太平洋 (Circum-pan Pacific Magnetometer Network CPMN) 地域での地磁気ネットワーク観測を継続実施し、1秒値の高時間分解能データを取得してきた。2005年からは、新たに準リアルタイムでデータ収集できる MAGnetic Data Acquisition System (MAGDAS) を210度磁気子午線沿いに20観測点、2006-7年度は磁気赤道沿いとその他に19観測点、2008年度はMAGDAS-IIとしてアフリカの96度磁気子午線沿いに10観測点を設置し、全球的なデータ収集を開始した。2010年度からは、更に最新化したMAGDAS磁力計50台を導入し、シベリア、インドネシア、アフリカ地域の30観測点を補強し、残り20台はこれまでの旧MAGDAS/CPMN観測点の機材更新に当てる計画になっている。この2005年以降の高時間分解能の膨大なデータは、現在のところ、現地とのインターネット・電話回線の不具合や磁力計の温度ドリフト等の問題を先ず解決するのが手一杯で、データ補正・校正した後のデータベース化するまでに至らず、一般の研究者が自由に利用できる状況にはない。研究課題「MAGDAS/CPMN/ EMNデータのデータベース化」では、新旧のMAGDAS/CPMNのデー

データベース化をはかり、データベース保管サーバーやホームページにより公開する。宙空領域に顕著に出現するsc/si, sfe, Pc 3-5, Pi 2-3, DP-2などのULF波動のグローバルな発生特性、伝播特性について、また、Sq, EEJ変化を表すEE指数や太陽風速度を表すPc5指数に関わる共同研究を推進する。

2. データベース作成の概要

- (1) 1995年から2004年までの磁気赤道地磁気ネットワークデータの整理と3秒値と1分値のデータベース化をはかった。
- (2) 2005年から2009年までの磁気赤道、環太平洋域に加え新たな210度磁気子午線沿いのMAGDAS/CPMN地磁気ネットワークデータの地磁気3成分毎の絶対値校正と温度補正を行い、3秒平均値と1分平均値のデータベース化をはかった。
- (3) 磁気赤道データベースを公開するために、マスターのCD-ROMを作成した。
- (4) S T E研で、(3)のマスターCD-ROMを焼き増し、関連研究者に配布した。
- (5) これらのデータベースを保存するために、マスターのデータサーバーを作成した。
- (6) 関連研究者に公開する為のMAGDAS/CPMN/EMNデータベースのホームページを開設した。
- (7) 高時間分解のデータを用いた、磁気赤道で顕著に現れるDP2、SSC、Pi 2などのULF波動のグローバルな発生特性、伝播特性に関わる共同解析研究、例えば極域変動電磁場と磁気赤道変動場との相関性や人工衛星データとの比較解析研究を推進した。

3. 共同研究の成果、公表状況

・データは太陽風-地球磁気圏相互作用、電離圏・磁気圏でのダイナミクス、電離圏-熱圏におけるプラズマ中性大気相互作用、ULF波動や巨大地震に伴う異常磁場変化についての国内・国際共同研究に加え、九州大学の大学院生の教育の一貫としても利用されている。地磁気脈動、Sq電流系、衛星磁場との比較、サブストームなど、多種多様の国内外での研究に必要な基礎データとして、データベースが利用されている。2001年以降の研究論文のリストを以下に示す。研究代表者に直接コンタクトがある利用実績は、年に30件程度であるが、1分値デジタルデータはホームページから自由に取得できるようになっているため、実際の利用はこのリストよりはるかに多いと思われる。

査読付き国際誌論文リスト (2001年以降 151編)

1. Akinaga, Y. M. Hayakawa, J.Y. Liu, K. Yumoto and K. Hattori (2001); A precursory ULF signature for Chi-Chi earthquake in Taiwan, *Natural Hazard and Earth System Sciences*, 1, 33-36.
2. Chi, P. J., C. T. Russell, J. Raeder, E. Zesta, K. Yumoto, H. Kawano, K. Kitamura, S. M. Petrinec, V. Angelopoulos, G. Le and M. B. Moldwin (2001); Propagation of the preliminary reverse impulse of sudden commencements to low latitudes, *J. Geophys. Res.*, 106, 18857-18864.
3. Kepko, L., M. G. Kivelson, and K. Yumoto (2001); Flow bursts, braking, and Pi2 pulsations, *J. Geophys. Res.*, 106, No. A2, 1903-1915.
4. Makarov, G. A., D. G. Baishev, S. I. Solovyev, V. A. Pilipenko, M. Engebretson, and K. Yumoto (2001); Meridional propagation velocity of the geomagnetic sudden impulse in the high-latitude region, *J. Geomag. Aeronomy*, Vol. 41, No. 5, p. 578-582. (in Russian)
5. Nose, M., S. Ohtani, K. Takahashi, A.T. Lui, R.W. McEntire, D.J. Williams, S.P. Christon, and K. Yumoto (2001); Ion composition of the near-Earth plasma sheet in substorm and quiet intervals: Geotail/EPIC measurements, *J. Geophys. Res.*, 106, A5, 8391-8403.

6. Sakurai T., Y. Tonegawa, Y. Shinkai, K. Yumoto, S. Kokubun, K. Tsuruda, and T. Mukai (2001); Poynting vectors of Pc 5 pulsations observed by the GEOTAIL satellite in the dayside outer magnetosphere, *Earth Planets Space*, 53, 843–849.
7. Sastri, J.H., T. Takeuchi, T. Araki, K. Yumoto, S. Tsunomura, H. Tachihara, H. Luehr, and J. Watermann (2001); Preliminary impulse of the geomagnetic storm sudden commencement of November 18, 1993, *J. Geophys. Res.* 106, 3905-3918.
8. Shiokawa, K., T. Ogawa, H. Oya, F.J. Rich, and K. Yumoto, (2001); A stable auroral red (SAR) arc observed in Japan after an interval of very weak solar wind, *J. Geophys. Res.*, 106, 26091-26101.
9. Waters, C.L., M.D. Sciffer, B.J. Fraser, F.W. Menk, K. Foulkes, K. Brand, O. Saka and K Yumoto (2001); The phase structure of very low latitude ULF waves across dawn, *J. Geophys. Res.*, 106, A8, 15599-15607.
10. Yumoto, K, and the CPMN Group (2001); Characteristics of Pi 2 magnetic pulsations observed at the CPMN stations: A review of the STEP results, *Earth Planets Space*, 53, 981-992.
11. Anderson, D., A. Anghel, K. Yumoto, M. Ishitsuka, and E. Kudeki (2002); Estimating daytime vertical ExB drift velocities in the equatorial F-region using ground-based magnetometer observations, *Geophys. Res. Lett.*, 29, No.12, 37, 1-4.
12. Angelopoulos, V. , J.A.Chapman, F.S.Mozer, J.D.Scudder, C.T.Russell, K.Tsuruda, T. Mukai, T.J. Hughes, and K.Yumoto, (2002); Plasma sheet electromagnetic power generation and its dissipation along auroral field lines, *J. Geophys. Res.*, 107, A8, SMP14-1 – 14-20.
13. Hattori, K., Y. Akinaga, M. Hayakawa, K. Yumoto, T. Nagao, and S. Uyeda, ULF magnetic anomaly preceding the 1997 Kagoshima Earthquakes, *Seismo Electromagnetics: Lithosphere-Atmosphere- Ionosphere Coupling*, Eds. by M. Hayakawa and O.A. Molchanov, TERRAPUB, Tokyo, 2002, pp.19-28.
14. Higuchi, T., S.-I. Ohtani, T. Uozumi, and K. Yumoto (2002); Pi 2 onset time determination with information criterion, *J. Geophys. Res.*, 107, No. A7, SMP 14, 1-13.
15. Kim, K.-H, C. A. Cattell, D.-H. Lee, K. Takahashi, K. Yumoto, K. Shiokawa, H. Singer, F. S. Mozer, and M. Andre (2002), Magnetospheric responses to sudden and quasi-periodic solarwind variations, *J. Geophys. Res.*, 107, in press.
16. Kawano H., K. Yumoto, V. A. Pilipenko, Y.-M. Tanaka, S. Takasaki, M. Iizima, and M. Seto (2002); Ground-based identification of magnetospheric field line eigen-frequency as a continuous function of ground latitude, *J. Geophys. Res.*, 107, No. A8, SMP 25, 1-12.
17. Mishin, E.V., J.C. Foster, A.P. Potekhin, A. Potapov, F.J. Rich, K. Yumoto, K. Schlegel, V.I. Taran, and H.B. Vo (2002); Global-scale, quasi-periodic disturbances during the magnetic storm September 25, 1998, *J. Geophys. Res.*, 107, No. A12, SMP 40-1 – 40-11.
18. Motoba, T., T. Kikuchi, H. Lohr, H. Tachihara, T.-I. Kitamura, K. Hayashi, and T. Okuzawa (2002); Global Pc 5 caused by a DP 2-type ionospheric current system, *J. Geophys. Res.*, 107, A2, SMP 7-1- 7-12.
19. Nishino, M., K. Makita, K. Yumoto, F. S. Rodrigues, N. J. Schuch, and M. A. Abdu (2002); Unusual ionospheric absorption characterizing energetic electron precipitation into the South Atlantic Magnetic Anomaly, *Earth Planets Space*, 54, 907–916.
20. Ohtani, S.-I., R. Yamaguchi, M. Nose, H. Kawano, M. Engebretson, and K. Yumoto (2002); Quiet-time magnetotail dynamics and their implications for the substorm trigger, *J. Geophys. Res.*, A2, SMP 6, 1-10, 1029/2001JA000116
21. Ohtani, S., R. Yamaguchi, H. Kawano, F. Creutzberg, J. B. Sigwarth, L. A. Frank, and T. Mukai(2002), Does the fast plasma sheet flow trigger a substorm?: A study of the August 14, 1996, event, *Geophysical Research Letters*, 29(15), 1721, doi:10.1029/2001GL013785, August 3, 2002.
22. Shiokawa, K., Y. Otsuka, T. Ogawa, N. Balan, K. Igarashi, A.J. Ridley, D.J. Knipp, A. Saito, and K. Yumoto (2002); A large-scale traveling ionospheric disturbance during the magnetic storm of September 15, 1999. *J. Geophys. Res.*, 107, in press.
23. Shiokawa, K., K. Yumoto, and J.V. Olson (2002); Multiple auroral brightenings and associated Pi 2 pulsations, *Geophys. Res. Lett.*, Vol.29, No.11, 32, 1-4.
24. Takahashi, K., K. Liou, and K. Yumoto (2002); Correlative study of ultraviolet aurora and low-latitude Pi 2 pulsations, *J. Geophys. Res.*, 107, No.12, SMP 2-1 – 2-14.
25. Trivedi, N.B., D.G. Sibeck, E. Zesta, J.C. Santos, K. Yumoto, T. Kitamura, M. S Shionohara, and S.L.G. Dutra (2002); Signatures of traveling convection vortices in ground magnetograms under the equatorial electrojet, *J. Geophys. Res.*, 107, No. A6, SMP16, 1-10.
26. Vassiliadis, D., A.J. Klimas, B.-H. Ahn, R.J. Parks, A. Viljanen, and K. Yumoto (2002); High-latitude electrodynamics from a multi-array nonlinear geomagnetic model, *COSPAR Colloquia Ser. Vol. 12 on Space Weather Study using Multi-point Techniques*, Edited by Ling-Hsiao Lyu, Pergamon Press, pp. 231-236.
27. Velichko V.A., R.N. Boroyev, M.G. Gelberg, D.G. Baishev, J.V. Olson, R.J. Morris and K. Yumoto (2002); North-south asymmetry of the substorm intensity depending on the IMF BY-component, *Earth Planets Space*, 54,

955-961.

28. Yagova, N., K. Yumoto, V. Pilipenko, K. Hattori, T. Nagao, and K. Saita (2002), Local variations of geomagnetic ULF noises and their relation to seismic activity, *Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere Coupling*, Eds. by M. Hayakawa and O.A. Molchanov, TERRAPUB, Tokyo, 2002, pp.45-48.
29. Yamaguchi, R., H. Kawano, S. Ohtani, T. Higuchi, K. Yumoto, T. Mukai, Y. Saito, and The Circum-pan Pacific Magnetometer Network Group (2002); The timing relationship between bursty bulk flows and Pi2s at the geosynchronous orbit, *Geophys. Res. Lettr.*, 29, No. 6, 16, 1-4.
30. Yumoto K., M. Shinohara, K. Nozaki, E. A. Orosco, Fr. V. Badillo, D. Bringas and the CPMN and WestPac Observation Groups (2002); Simultaneous ground-based of electric and magnetic field variations near the magnetic equator for space weather study, *COSPAR Colloquia Ser.Vol. 12 on Space Weather Study using Multi-point Techniques*, Edited by Ling-Hsiao Lyu, Pergamon Press, pp. 243-247.
31. Yumoto, K. (2002); Sudden changes during auroral substorm, *Bifurcation Phenomena in Plasma* Edited by S-I. Itoh and Y. Kawai, Kyushu Univ. Press, pp.217-227.
32. Chandrasekhar, E., Naoto Oshiman, and Kiyohumi Yumoto (2003); On the role of oceans in the geomagnetic induction by Sq along the 210. magnetic meridian region, *Earth Planets Space*, 55, 315-326.
33. Doumouya V., Y. Cohen, B. R. Arora and K. Yumoto (2003); Local time and longitude dependence of the equatorial electrojet magnetic effects, *J. Atmos. Solar-Terres.Phys.*, 65, Sept.-Oct., 1265-1282.
34. Farrugia, C.J., V.K. Jordanova, M.P. Freeman, C.C. Cochechi, R.L. Arnoldy, M. Engebretson, P. Stauning, G. Rostoker, M.F. Thomsen, G. Reeves, and K. Yumoto (2003); Large-scale geomagnetic effects of May 4, 1998, *Adv. Space Res.*, 31, No. 4, 1111-1116.
35. Huang Chao-Song, J. C. Foster, G. D. Reeves, J. Watermann, J.H. Sastri, K. Yumoto, and P. Song (2003); Global magnetospheric-ionospheric oscillations initiated by a solar wind pressure impulse, *J. Geophys. Res.*, 108, No. 6, SMP 7-1 – 7-11.
36. Morioka, A., Y.Miyoshi, T.Seki, F.Tsuchiya, H.Misawa, H.Oya, H.Matsumoto, K.Hashimoto, T.Mukai, K.Yumoto, and T.Nagatsuma (2003); AKR disappearance during magnetic storms, *J. Geophys. Res.*, 108, No. A6, SMP 3-1 – 3-9.
37. Motoba T, Kikuchi T, Okuzawa T, Yumoto K (2003); Dynamical response of magnetosphere- ionosphere system to a solar wind dynamic pressure oscillation, *Journal of Geophysical Research*, 108(A5): art.no.1206 MAY 23
38. Nose, M., K. Takahashi, T. Uozumi, K. Yumoto, Y. Miyoshi, A. Morioka, D. K. Milling, P. R. Sutcliffe, H. Matsumoto, T. Goka, and H. Nakada (2003); Multipoint observations of a Pi2 pulsation on morning side: The September 20, 1995, event, *J. Geophys. Res*, Vol.108 , No.5, 1219, 1-16.
39. Parkhomov VA, Mishin W, Pashinin AY, Parkhmatulin RA, Makarov GA, Yumoto K (2003); Peculiarities of the magnetospheric response to pressure pulse in the solar wind as inferred from synchronous ground-based and satellite observations, *Geomagnetism and Aeronomy*, 43(1):21-28 JAN-FEB.
40. Sastri, J.H., Y. Kamide, and K. Yumoto (2003); Signatures for magnetospheric substorms in the geomagnetic field of dayside equatorial region: Origin of ionospheric component, *J. Geophys. Res*, Vol.108 , No. A10, SIA 4-1 – 4-10.
41. Shiokawa, K., Y. Otsuka, T. Ogawa, S. Kawamura, M. Yamamoto, S. Fukao, T. Nakamura, T. Tsuda, N. Balan, K. Igarashi, G. Lu, A. Saito, and K. Yumoto (2003); Thermospheric wind during a storm time large-scale traveling ionospheric disturbance, *J. Geophys. Res.*, Vol.108 , No. A12, 1423, 3-1 – 3-13.
42. Solovyev SI, A.V. Moiseyev, D.G. Baishev, G.A. Makarov, K. Yumoto, and M. Engebreston (2003); Characteristics of the global geomagnetic response to quasi-periodic variations in the solar dynamic pressure, *Geomagnetism and Aeronomy*, 43(2): pp. 172-180.
43. Solovyev S.I., A.V. Moiseyev, K. Yumoto, and M. Engebreston (2003); Characteristics of magnetospheric-ionospheric disturbances during an increase of the solar wind dynamic pressure, *Geomagnetism Aeronomy*, 43(5): pp579-592.
44. Baishev D.G., G.V. Borisov, V.A. Velichko, S.I. Solovyev, and K. Yumoto (2004); Manifestations of sudden commencement of a severe magnetic storm of November 20, 2003, in generation of an sc pulse, Psc pulsations, and spatial modulation of the auroral brightness, *Cosmic Research*, 42(6): pp.583-590.
45. Cheng C.-C., C. T. Russell, K. Yumoto, Y. F. Gao, and P. J. Chi (2004); Characteristics of consecutive bursts of Pi 2 pulsations observed at the SMALL array: A new implication, *Earth Planets Space*, 56, No. 5, 531-545.
46. Haraguchi, K., H. Kawano, K. Yumoto, S. Ohtani, T. Higuchi, and G. Ueno (2004); Ionospheric conductivity dependence of dayside region-0, 1, and 2 field-aligned current systems: Statistical study with DMSP-F7, *Annales Geophysicae*, 22(7-9-2004), 2775-2783.
47. Hobara, Y., H.C. Koons, J.L. Roeder, K. Yumoto and M. Hayakawa (2004); Characteristics of ULF magnetic anomaly before earthquakes, *Physics and Chemistry of the Earth*, Vol. 29, issues 4-9, 437-444.
48. Huang Chao-Song, J. C. Foster, L. P. Goncharenko, G. D. Reeves, J.L. Chau, K. Yumoto, and K. Kitamura (2004); Variations of low-latitude geomagnetic fields and Dst caused by magnetospheric substorms, *J. Geophys. Res.*, 109,

- A05219, 1-14, doi:10.1029/2003JA010334.
49. Le Guan, S.-H. Chen, Y. Zheng, C. T. Russell, J. A. Slavin, C. Huang, S. M. Petrinec, T. E. Moore., J. Samson, H. J. Singer., J. D. Scudder., and K. Yumoto (2004); Coordinated polar spacecraft, geosynchronous spacecraft, and ground-based observations of magnetopause processes and their coupling to the ionosphere, *Annales Geophysicae*, 22:4329-4350.
 50. Lee, D.-Y., L.R. Lyons, and K. Yumoto (2004); Sawtooth oscillations directly driven by solar wind dynamic pressure enhancements, *J. Geophys. Res.* Vol. 109, A04202, doi:10.1029/2003JA010246.
 51. Motoba, T., T. Kikuchi, T. F. Shibata, and K. Yumoto (2004), HF Doppler oscillations in the low-latitude ionosphere coherent with equatorial long-period geomagnetic field oscillations, *J. Geophys. Res.*, 109, A06214, doi:10.1029/2004JA010442.
 52. Ohtani, S., G. Ueno, R. Yamaguchi, H. Singer, F. Creutzberg, K. Yumoto, K. Kitamura, and T. Mukai (2004), Tail dynamics during the growth phase of the November 24, 1996, substorm event: Near-earth reconnection confined in the plasma sheet, *J. Geophys. Res.*, Vol. 109, A05211, 1-10, doi:10.1029/2003JA010299.
 53. Pilipenko V.A., E.Fedorov, M.J. Engebretson, and K. Yumoto (2004); Energy budget of Alfvén wave interactions with the auroral acceleration region, *J. Geophys. Res.*, Vol. 109, A10204, doi:10.1029/2004JA010440, 1-13.
 54. Solov'yev S.I., A.V. Moiseyev, M. Engebretson, and K. Yumoto (2004); Sudden geomagnetic impulse generation: Effect of variations in ionospheric conductivity, *Geomagnetism and Aeronomy*, 44(4): pp. 413-422.
 55. Tanaka, Y.-M., K. Yumoto, A. Yoshikawa, M. Shinohara, H. Kawano, T.-I. Kitamura (2004); Longitudinal structure of Pc 3 pulsations on the ground near the magnetic equator, *J. Geophys. Res.*, Vol.109, A0321, doi:10.1029/2003JA009903, 1-10.
 56. Tsurutani B. T., A. Mannucci, B. Iijima, M. A. Abdu, J. H. A. Sobral, W. D., Gonzalez, F. L. Guarnieri, T. Tsuda, A. Saito, K. Yumoto, B. G. Fejer, T. Fuller Rowell, J. U. O. Kozyra, J. C. Foster and A. Coster, V. M. Vasyliunas (2004); Global dayside ionospheric uplift and enhancement associated with interplanetary electric fields, *J. Geophys. Res.*, Vol. 109, A08302, doi:10.1029/2003JA010342, 1-16.
 57. Uozumi, T. K. Yumoto, H. Kawano, A. Yoshikawa, S. Ohtani, J. V. Olson, S.-I. Akasofu, S. I. Solov'yev, E. F. Vershinin, K. Liou, and C.-I. Meng (2004); Propagation characteristics of Pi 2 magnetic pulsations observed at ground high-latitudes, *J. Geophys. Res.*, 109, A08203, doi:10.1029/2003JA009898, 1-11.
 58. Volwerk M., K.-H. Glassmeier, A. Runov, R. Nakamura, W. Baumjohann, B. Klecker, I. Richter, A. Balogh, H. Rème and K. Yumoto (2004); Flow burst induced large scale plasmashet oscillation, *J. Geophys. Res.*, Vol. 109, A11208, doi:10.1029/2004JA010533.
 59. Yamaguchi, R., H. Kawano, S. Ohtani, K. Yumoto, S. Kokubun, and The Circum-pan Pacific Magnetometer Network Group (2004); Total pressure variations in the magnetotail as a function of the position and the substorm magnitude, *J. Geophys. Res.*, Vol. 109, A03206, doi: 10.1029/2003JA010196.
 60. Yumoto, K. (2004); Transport of HM energy through the magnetosphere-ionosphere coupling system-Results from the ground-based network observations, *Advances in Solar-Terrestrial Physics*, edited by H. Oya, TERRAPUB, Tokyo, pp.175-211.
 61. Huang, Chao-Song, Geoff D. Reeves, Guan Le, and K. Yumoto (2005); Are sawtooth oscillations of energetic plasma particle fluxes caused by periodic substorms or driven by solar wind pressure enhancements?, *J. Geophys. Res.*, Vol. 110, No. A7, A07207, doi:10.1029/2005JA011018, 1-19.
 62. Kim, K.-H., K. Takahashi, D.-H. Lee, P. R. Sutcliffe, and K. Yumoto (2005); Pi 2 pulsations associated with poleward boundary intensifications during the absence of substorms, *J. Geophys. Res.*, Vol. 110, No.A1, A01217, doi.org/10.1029/2004JA010780, 1-15,
 63. Kim, K.-H, D.-H. Lee, R.-E. Denton, K. Takahashi, J. Goldstein, Y.-J. Moon, K. Yumoto, Y.-S. Pyo, and A. Keiling (2005); Pi 2 pulsations in a small and strongly asymmetric plasmasphere, *J. Geophys. Res.*, Vol. 110, A10, A10201, doi:10.1029/2005JA011179, 1-9.
 64. Kim, K.-H, D.-H. Lee, K. Takahashi, C.T. Russell, Y.-J. Moon, and K. Yumoto, (2005); Pi 2 pulsations observed from the Polar satellite outside the plasmopause, *Geophys. Res. Lett.*, Vol. 32, No.18, L18102, doi:10.1029/2005GL023872, 1-4.
 65. Kitamura, K., H. Kawano, S.-I. Ohtani, A. Yoshikawa and K. Yumoto (2005); Local-time distribution of low and middle latitude ground magnetic disturbances at sawtooth injections of April 18-19, 2002, *J. Geophys. Res.*, Vol. 110, No. A7, A07208, doi:10.1029/2004JA011179, 1-11.
 66. Murata K.T., K. Yamamoto, D. Matsuoka, E. Kimura, H. Matsumoto, M. Okada, T. Mukai, J. B. Sigwarth, S. Fujita, T. Tanaka, K. Yumoto, T. Ogino, K. Shiokawa, N.A. Tsyganenk, J. L. Green and T. Nagai (2005); Department of the Virtual Earth's Magnetosphere Shstem (VEMS), *Advances in Polar Upper Atmosphere Research*, No.19, 135-151.
 67. Obana, Y., A. Yoshikawa, J. V. Olson, R. J. Morris, B. J. Fraser, and K. Yumoto (2005); North-South asymmetry of the amplitudes of high-latitude Pc 3-5 pulsations: Observations at conjugate stations, *J. Geophys. Res.*, Vol. 110, No. A10, A10214, doi:10.1029/2003JA010242, 1-9.

68. Pilipenko, V.A., N. Mazur, E. Fedrov, T. Uozumi and K. Yumoto (2005); Excitation of Alfvén impulse by the anomalous resistance onset on the auroral field lines, *Annales Geophysicae*, Vol. **23**, 1455-1465.
69. Shi, Y., E. Zesta, L. R. Lyons, A. Boudouridis, K. Yumoto and K. Kitamura (2005); Effect of solar wind pressure enhancements on storm time ring current asymmetry, *J. Geophys. Res.*, Vol. **110**, A10, A10205, doi:10.1029/2005JA011019, 1-19.
70. Shiokawa, K., K. Yago, K. Yumoto, D.G. Baishev, S.I. Solovyev, F.J. Rich, and S. B. Mende (2005); Ground and satellite observations of substorm onset arcs, *J. Geophys. Res.*, Vol. **110**, A12225, doi:10.1029/2005JA011281, 1-10.
71. Solovyev S.I., A.V. Moiseyev, M. Engebretson, and K. Yumoto (2005); Effect of the IMF orientation on formation and propagation of geomagnetic sudden impulse, *Geomagnetism and Aeronomy*, **45**(3): pp. 350-362.
72. Takahashi, K., L. Kan, K. Yumoto, K. Kitamura, and M. Nose (2005); Source of Pc 4 pulsations observed on the nightside, *J. Geophys. Res.*, Vol. **110**, A12207, doi:10.1029/2005JA011093, 1-15.
73. Yago, K. Shiokawa, H. Hayashi, and K. Yumoto (2005); Auroral particles associated with a substorm brightening arc, *Geophys. Res. Lett.*, Vol. **32**, L06104, doi:10.1029/2004GL021894, 1-4.
74. Abe, S., H. Kawano, J. Goldstein, S. Ohtani, S.I. Solovyev, D.G. Baishev, and K. Yumoto (2006); Simultaneous identification of plasmaspheric plume by a ground magnetometer pair and IMAGE EUV, *J. Geophys. Res.*, Vol. **111**, A11202, doi:10.1029/2006JA011653, 1-9.
75. Anderson, D., A. Anghel, J.L. Chau, and K. Yumoto (2006); Global, low-latitude, vertical E x B drift velocities inferred from daytime magnetometer observations, *Space Weather*, Vol. **4**, S08003, 1-9.
76. Anderson, D., A. Anghel, J. Chau, K. Yumoto, A. Bhattacharyya and S. Alex (2006), Daytime, low latitude, vertical ExB drift velocities, inferred from ground-based magnetometer observations in the Peruvian, Philippine and Indian longitude sectors under quiet and disturbed conditions, *Solar Influence on the Heliosphere and Earth's Environment: Recent Progress and Prospects*, Edited by N. Gopalswamy and A. Bhattacharyya, ISBN-81-87099-40-2, pp. 389-394.
77. Huang Chao-Song and Kiyohumi Yumoto (2006); Quantification and hemispheric asymmetry of low-latitude geomagnetic disturbances caused by solar wind pressure enhancements, *J. Geophys. Res.*, Vol. **111**, A09316, doi: 10.1029/2006JA011831, 1-11.
78. Liu, J.Y., C.H. Chen, Y.I. Chen, H.Y. Yen, K. Hattori and K. Yumoto (2006); Seismo-geomagnetic anomalies and M_w > 5.0 earthquakes observed in Taiwan during 1988-2001, *Physics and Chemistry of the Earth*, **31**, 215-222.
79. Nishino, M., K. Makita., K. Yumoto, Y. Miyoshi, N. J. Schuch, and M.A. Abdu (2006), Energetic particle precipitation in the Brazilian geomagnetic anomaly during the "Bastille Day storm" of July 2000, *Earth Planets Space*, **58**, 607-616.
80. Rastogi, R.G., and K. Yumoto (2006); Equatorial electrojet in the East Brazil anomaly region, *Earth Planets Space*, **58** (No.2), 103-106.
81. Sastri J. H., K. Yumoto, J. V. S. V. Rao and R. Subbiah (2006); On the nature of response of dayside equatorial geomagnetic H-field to sudden magnetospheric compressions, *J. Atmos. Solar-Terr. Phys.*, **68**, 1642-1652.
82. Shi Y., E. Zesta, L. R. Lyons, K. Yumoto, and K. Kitamura (2006); Statistical study of effect of solar wind dynamic pressure enhancements on dawn-to-dusk ring current asymmetry, *J. Geophys. Res.*, Vol. **111**, A10216, doi:10.1029/2005JA011532, 2006, 1-11.
83. Shiokawa, K., K. Seki, Y. Miyoshi, A. Ieda, T. Ono, M. Iizima, T. Nagatsuma, T. Obara, T. Takashima, K. Asamura, Y. Kasaba, A. Matsuoka, Y. Saito, H. Saito, M. Hirahara, Y. Tonegawa, F. Toyama, M. Tanaka, M. Nose, Y. Kasahara, K. Yumoto, H. Kawano, A. Yoshikawa, Y. Ebihara, A. Yukimatsu, and the Inner Magnetosphere Subgroup (2006); ERG -- A small-satellite mission to investigate the dynamics of the inner magnetosphere, *Advances in Space Research*, **38**, 1861-1869.
84. Takasaki, S., H. Kawano, Y. Tanaka, A. Yoshikawa, M. Seto, M. Iijima, Y. Obana, N. Sato and K. Yumoto (2006); A significant mass density increase during a large magnetic storm in October 2003 obtained by ground-based ULF observations at L ~ 1.4, *Earth Planets Space*, **58**, 617-622.
85. Tsurutani, B.T., A. Saito, O.P. Verkhoglyadova, A.J. Mannucci, M.A. Abdu, T. Araki, W.D. Gonzalez, B.A. Iijima, G.S. Lakhina, H. McCreadie, J.H.A. Soral, T. Tsuda, K. Yumoto, and V.M. Yasyliunas (2006), The dayside ionospheric "Superfountain" (DIS), plasma transport and other consequences, *Solar Influence on the Heliosphere and Earth's Environment: Recent Progress and Prospects*, Edited by N. Gopalswamy and A. Bhattacharyya, ISBN-81-87099-40-2, pp. 384-388.
86. Yumoto, K., and the MAGDAS Group (2006); MAGDAS project and its application for space weather, *Solar Influence on the Heliosphere and Earth's Environment: Recent Progress and Prospects*, Edited by N. Gopalswamy and A. Bhattacharyya, ISBN-81-87099-40-2, pp. 399-405.
87. Anghel, A., D. Anderson, N. Maruyama, J. Chau, K. Yumoto, A. Bhattacharyya, S. Alex (2007); Interplanetary electric fields and their relationship to low-latitude electric fields under disturbed conditions, *J. Atmos. Solar-Terr. Phys.*, **69**, 1147-1159.

88. Bencze P., B. Heilig, B. Zieger, J. Szendroi, J. Vero, H. Luhr, K. Yumoto, Y. Tanaka, and J. Strestik (2007); Effect of the August 11, 1999 total solar eclipse on geomagnetic pulsations, *Acta Geod. Geoph. Hung.*, Vol. 42(1), 23-58.
89. Han D.-S., Yang H.-G., Chen Z.-T., Araki T., Dunlop M.W., Nose M., Iyemori T., Li Q., Gao Y.F. and Yumoto K. (2007): Coupling of perturbations in the solar wind density to global Pi3 pulsations: A case study: *J. Geophys. Res.*, Vol.112(A5): A05217.
90. Kozyreva, O.V., V.A. Pilipenko, M.J. Engebretson, K. Yumoto, J. Watermann, and N. Romanova (2007); In search of a new ULF wave index: Comparison of Pc5 power with dynamics of geostationary relativistic electrons, *Planet. Space Sci.*, 55, 755-769.
91. Kulesh, M, M. Nose, M. Holschneider and K. Yumoto (2007); Polarization analysis of a Pi 2 pulsation using continuous wavelet transform, *Earth Planets Space*, 59, No.8, 961-970.
92. Morioka, A., Y. Miyoshi, F. Tsuchiya, H. Misawa, T. Sakanoi, K. Yumoto, R.R. Anderson, J.D. Menietti, and E.F. Donovan (2007); Dual structure of auroral acceleration regions at substorm onsets as derived from AKR spectra, *J. Geophys. Res.*, Vol.112, A06245, doi:10.1029/ 2006JA012186
93. Rastogi R.G. and K. Yumoto (2007): Equatorial electrojet in the East Brazil anomaly region, *Earth Planet Space*, 59, No.2, 103-106.
94. Tanaka Y-M., Yumoto K., Yoshikawa A., Itonaga M., Shinohara M., Takasaki S. and Fraser B.J. (2007): Horizontal amplitude and phase structure of low-latitude Pc3 pulsations around the dawn terminator: *J. Geophys. Res.* 112(A11): A11308.
95. Tokunaga, T., H. Kohta, A. Yoshikawa, T. Uozumi, and K. Yumoto (2007); Global features of Pi 2 pulsations obtained by Independent Component Analysis, *Geophys. Res. Lett.*, Vol. 34,L14106, doi:10.1029/2007GL030174
96. Tsurutani, B.T., O.P. Verkhoglyadova, A.J. Mannucci, T. Araki, A. Sato, T. Tsuda, and K. Yumoto (2007); Oxygen ion uplift and satellite drag effects during the 30 October 2003 daytime superfountain event, *Ann. Geophys.*, 25, 569-574.
97. Uozumi, T., H. Kawano, A. Yoshikawa, M. Itonag, and K. Yumoto (2007); Pi 2 source region in the magnetosphere deduced from CPMN data, *Planet. Space Sci.*, 55, 849-857, doi:10.1016/j.pss. 2006.03.01.
98. Yago, K., K. Shiokawa, K. Yumoto, D. G. Baishev, S.I. Solovyev, and F.J. Rich (2007); Simultaneous DMSP, all-sky camera, and IMAGE FUV observations of a substorm brightening arc at a substorm pseudo-breakup, *Earth Planets Space*, 59, 45-49
99. Yagova N., V. Pilipenko, J. Watermann, and K. Yumoto (2007); Control of high latitude geomagnetic fluctuations by interplanetary parameters: A role of suprathermal ions, *Annales Geophysicae*, 25, No.4, 1037-1047
100. Yumoto K. and the MAGDAS Group (2007): Space weather activities at SERC for IHY: MAGDAS: *Bull. Astr. Soc. India*, 35, 511-522.
101. Baishev D.G., G.V. Borisov, V.A. Velichko, S.N. Samsonov, and K. Yumoto (2008); Variations in the geomagnetic field and auroras during the main phase of a large magnetic storm of November 20, 2003, *Geomagnetism and Aeronomy*, 48, N0.2, 201-208.
102. Chen, C.H., J.Y. Liu, K. Yumoto, C.H. Lin, and T.W. Fang (2008); Equatorial ionization anomaly of the total electron content and equatorial electrojet of ground-based geomagnetic field strength, *J. Atmos. Solar-Terre. Phys.*, 70, 2171-2183.
103. Guozhu Li, Baiqi Ning, Biqiang Zhao, Libo Liu, J.Y. Liu, K. Yumoto (2008); Effects of geomagnetic storm on GPS ionospheric scintillations at Sanya, *J. Atmos. Solar-Terre. Phys.*, 70, 1034-1045.
104. Huang C-S, K. Yumoto, S. Abe and G. Sofka (2008): Low-latitude ionospheric electric and magnetic field disturbances in response to solar wind pressure enhancements, *J. Geophys. Res.*, Vol. 13, A08314, doi:10.1029/2007JA012940, 2008, p.11.
105. Kepko, L., J. Raeder, V. Angelopoulos, J. McFadden, D. Larson, H.U. Auster, W. Magnes, H.U. Frey, C. Carlson, M. Henderson, S.B. Mende, K. Yumoto, H.J. Singer, G. Parks, I. Mann, C.T. Russell, E. Donovan, and R. McPherron (2008); Highly periodic stormtime activations observed by THEMIS prior to substorm onset, *Geophys. Res. Lett.*, Vol. 35, L17S24, doi:10.1029/ 2008GL034235, p.5.
106. Kitamura, M., K. Sekiguchi, K. Yumoto, and H.J. Haubold (2008); Third UN/ESA/NASA Workshop on the International Heliophysical Year 2007 and Basic Space Science, *Earth Moon Planet*, doi 10.1007/s11038-008-9276-5.
107. Li, Guozhu, Baiqi Ning, Biqiang Zhao, Libo Liu, J.Y. Liu, K. Yumoto (2008); Effects of geomagnetic storm on GPS ionospheric scintillations at Sanya, *J. Atmos. Solar-Terre. Phys.*, 70, 1034-1045.
108. Liou K., K. Takahashi, P.T. Newell and K. Yumoto (2008): Polar Ultraviolet Imager observations of solar wind-driven ULF auroral pulsations: *Geophys. Res. Lett.*, Vol. 35., L16101, doi:10.1029/ 2008GL034953, 2008, p.5.
109. Maeda, N., S. Takasaki, H. Kawano, S. Ohtani, P. M. E. Decreau, J. G. Trotignon, S. I. Solovyev, D. G. Baishev, and K. Yumoto (2008), Simultaneous observations of the plasma density on the same field line by the CPMN ground magnetometers and the Cluster satellites, *Advances in Space Research (J. Adv. Space Res.)*,

doi:10.1016/j.asr.2008.04.016.

110. Morioka, A., Y. Miyoshi, F. Tsuchiya, H. Misawa, K. Yumoto, G. K. Parks, R. R. Anderson, J. D. Menietti, E. F. Donovan, F. Honary, and E. Spanswick (2008), AKR breakup and auroral particle acceleration at substorm onset, VOL. 113, A09213, doi:10.1029/2008JA013322, 1-14.
111. Nakajima A., K. Shiokawa, K. Seki, J.P. McFadden, C.W. Carlson, R.J. Strangeway and K. Yumoto (2008): Particle and field characteristics of broadband electrons observed by the FAST satellite during geomagnetic storms: A multievent study, *J. Geophys. Res.* **113**(A06): A06221, doi:10.1029/2007JA013001.
112. Rastogi R.G., H. Chandra, M.E. James, Kentarou Kitamura and K. Yumoto (2008): Characteristics of the Equatorial Electrojet current in Central South America, *Earth Planets Space*, **60**, 623-632.
113. Sastri J.H., Yumoto K., Rao J.V., and Ikeda A (2008): Summer-winter hemisphere asymmetry of the preliminary reverse impulse of geomagnetic storm sudden commencements at midlatitudes: *J. Geophys. Res.*, Vol.113, A05302, 2007JA012968.
114. Solov'yev, S.I., R.N. Boroyer, A.V. Moiseyev, A. Du and K. Yumoto (2008); Effect of auroral electrojets and solar wind parameters on variations in the intensity of low-latitude geomagnetic disturbances and Dst during the extremely large magnetic storm of November 20-21, 2003, *Geomagnetism and Aeronomy*, Vol. 48, No.3, pp.293-306.
115. Tsurutani B.T., Verkhoglyadova O.P., Mannucci A.J., Saito A., Araki T., Yumoto K., Tsuda T., Abdu M.A., Sobral J.H.A., Gonzalez W.D., McCreadie H., Lakhina G.S., Vasyliunas V.M. (2008): Prompt Penetration Electric Fields (PPEFs) and Their Ionospheric Effects During the Great Magnetic Storm of October 30-31, 2003: *J. Geophys. Res.*, Vol.113, A05311, doi:10.1029/2007JA012879
116. Uozumi, T., K. Yumoto, K. Kitamura, S. Abe, Y. Kakinami, M. Shinohara, A. Yoshikawa, H. Kawano, T. Ueno, T. Tokunaga, D. McNamara, J. K. Ishituka, S.L.G. Dutra, B. Damtie, V. Doumbia, O. Obrou, A.B. Rabiou, I.A. Adimula, M. Othman, M. Fairós, R.E.S. Otadoy, and the MAGDAS Group (2008): A new index to monitor temporal and long-term variations of the Equatorial Electrojet by MAGDAS/CPMN real-time data: EE-Index, *Earth Planets Space*, **60**, 785-790.
117. Volwerk, M., R. Nakamura, W. Baumjohann, T. Uozumi, K. Yumoto, and A. Balogh (2008); Tailward propagation of Pi 2 waves in the Earth's magnetotail lobe, *Ann. Geophys.*, **26**, 4023-4030.
118. Hasbi, A. M., M.A. Momani, M.A.M. Ali, N. Misran, K. Shiokawa, Y. Otsuka, and K. Yumoto (2009); Ionospheric and geomagnetic disturbances during the 2005 Sumatran earthquakes, *J. Atmos. Solar-Terres. Phys.*, **71**, doi:10.1016/j.jastp.2009.09.004, p. 1992-2005.
119. Keika K., Nakamura R., Baumjohann W., Angelopoulos V., Chi P.J., Glassmeier K.H., Filling M., Magnes W., Auster H.U., Fornaçon K.H., Reeves G.D., Yumoto K., Lucek E.A., Carr C.M., and Dandouras I. (2009); Substorm expansion triggered by a sudden impulse front propagating from the dayside magnetopause, *J. geophys. Res.*, **114**, doi:10.1029/2008JA013445.
120. Li, G., B. Ning, B. Zhao, L. Liu, W. Wan, F. Ding, J. S. Xu, J. Y. Liu, and K. Yumoto (2009), Characterizing the 10 November 2004 storm-time middle-latitude plasma bubble event in Southeast Asia using multi-instrument observations, *J. Geophys. Res.*, **114**, A7, doi:10.1029/2009JA014057.
121. Maeda, G., K. Yumoto and the MAGDAS Group (2009); Progress report on the deployment of MAGDAS, *Earth Moon Planet*, doi 10.1007/s11038-008-9284-5, vol.104, pp.271-275.
122. Maeda, N., S. Takasaki, H. Kawano, S. Ohtani, P. M. E. Decreau, J. G. Trotignon, S. I. Solov'yev, D. G. Baishev, and K. Yumoto (2009), Simultaneous observations of the plasma density on the same field line by the CPMN ground magnetometers and the Cluster satellites, *Advances in Space Research (J. Adv. Space Res.)*, **43**, doi:10.1016/j.asr.2008.04.016, p.265-272.
123. Morioka, A., Y. Miyoshi, F. Tsuchiya, H. Misawa, K. Yumoto, G.K. Parks, R.R. Anderson, J.D. Menietti, and F. Honary (2009); Vertical evolution of auroral acceleration at substorm onset, *Ann. Geophys.*, **27**, 525-535.
124. Otadoy, R.E.S., D. McNamara, K. Yumoto, and MAGDAS group (2009); Proposal to use the MAGNETIC Acquisition System (MAGDAS) of the Circum Pan-Pacific Magnetometer Network (CPMN) to study the equatorial electrojet: A Philippine contribution to the International Heliophysical Year, *Earth Moon Planet*, doi 10.1007/s11038-008-9271-x, vol. 104, pp. 167-172.
125. Rabiou, A.B., I.A. Adimula, K. Yumoto, J.O. Adeniyi, G. Maeda, and MAGDAS/CPMN project group (2009); Preliminary results from the magnetic field measurements using MAGDAS at Ilorin, Nigeria, *Earth Moon Planet*, doi 10.1007/s11038-008-9290-7, vol. 104, pp. 173-179.
126. Sahai, Y., F. Becker-Guedes, P. R. Fagundes, R. de Jesus, A. J. de Abreu, Y. Otsuka, K. Shiokawa, K. Igarashi, K. Yumoto, C.-S. Huang, H. T. Lan, A. Saito, F. L. Guarnieri, V. G. Pillat, and J. A. Bittencourt (2009); Effects observed in the ionospheric F region in the east Asian sector during the intense geomagnetic disturbances in the early part of November 2004, *J. Geophys. Res.*, **114**, doi:10.1029/2008JA013053, 2009, pp. 1-11.
127. Saroso, S., K. Hattori, H. Ishikawa, Y. Ida, R. Shirogane, M. Hayakawa, K. Yumoto, K. Shiokawa and M. Nishihaishi (2009); ULF geomagnetic anomalous changes possibly associated with 2004-2005 Sumatra

- earthquakes, *Physics and Chemistry of the Earth* (J. Phys. Chem. Earth), doi:10.1016/j.pce.2008.10.065, 34, 343-349.
128. Solov'ev, S.I., R.N. Boroyev, A.V. Moiseyev, A. Du and K. Yumoto (2009); Dynamics of the ionospheric electric currents and auroral luminosity boundaries during strong magnetic storms, *Geomagnetism and Aeronomy*, Vol. 49, No.4, pp.450-460.
 129. Thomas, J. N., J.J. Love, M.J.S. Johnston, and K. Yumoto (2009), On the reported magnetic precursor of the 1993 Guam earthquake, *Geophys. Res. Lett.*, Vol.36, L16301, doi:10.1029/GL039020, 2009, pp.1-5.
 130. Uozumi, T., S. Abe, K. Kitamura, T. Tokunaga, A. Yoshikawa, H. Kawano, R. Marshall, R.J. Morris, B.M. Shevtsov, S.I. Solov'ev, D.J. McNamara, K. Liou, S. Ohtani, M. Itonaga, and K. Yumoto (2009), Propagation characteristics of Pi 2 pulsations observed at high- and low-latitude MAGDAS/CPMN stations: A statistical study, *J. Geophys. Res.*, Vol. 114, A11207, doi:10.1029/2009JA014163, pp. 1-16.
 131. Zhao, B., W. Wan, L. Liu, K. Igarashi, K. Yumoto, B. Ning (2009); Ionospheric response to the geomagnetic storm on 13–17 April 2006 in the West Pacific region, *J. Atmos. Solar-Terre. Phys.*, **71**, 88-100.
 132. Yamazaki, Y., K. Yumoto, A. Yoshikawa, S. Watari, and H. Utada (2009); Characteristics of counter-Sq SFE at the Dip equator1 (SFE*) observed by CPMN stations, *J. Geophys. Res.*, vol.114, A05306, doi:10.1029/2009JA014124, pp. 1-5.
 133. Yamazaki Y., Yumoto, T. Uozumi, K., Yoshikawa and M.G. Cardinal (2009); Equivalent current systems for the annual and semi-annual Sq variations observed along the 210 MM CPMN stations, *J. Geophys. Res.*, Vol. 104, A12320, doi:10.1029/2009JA014638, pp. 1-9.
 134. Yumoto, K., S. Ikemoto, M.G. Cardinal, M. Hayakawa, K. Hattori, J.Y. Liu, S. Saroso, Ruhimat M., M. Husni, D. Widarto, E. Ramos., D. McNamara, R.E. Otadoy, G. Yumul, R. Eborra and N. Servando (2009): A new ULF wave analysis for seismo-electromagnetics using CPMN/MAGDAS data, *Physics and Chemistry of the Earth* (J. Phys. Chem. Earth), doi:10.1016/j.pce.2008.04.005, 34, 360-366.
 135. Yumoto, K., and STPP Sub-committee (2009); International heliophysical year activities in Japan, *Data Science Journal*, Vol. 8, 30 March 2009, pp. S14-S23.
 136. Yumoto K., A. Ikeda, M. Shinohara, T. Uozumi, K. Nozaki, S. Watari, K. Kitamura, V. V. Bychkov, and B. M. Shevtsov (2009): Electric and Magnetic Field Variations at Low and Equatorial Latitudes During Sc, DP2, and Pi2 Events, *Advances in Geosciences*, Vol. **14**, Solar Terrestrial, Eds. Marc Duldig et al., World Sci. Publ. Comp., pp.197-212.
 137. Yumoto, K. H. Kawano, and MAGDAS group (2009); MAGDAS for geospace environment monitoring, *26th ISTS-ISTS Special Issue of JSASS On-Line Journal, Trans. JSASS Space Technology Japan*, Vol.7, No. ists26, pp. Tr_2-Tr_2_4.
 138. Yumoto, K., G. Maeda, S. Abe, T. Uozumi, A. Fujimoto, A. Ikeda, T. Tokunaga, Y. Yamazaki, T. Ueno, Y. Hitayama, B. Rabiou, C.B.S. Uiso, P. Baki, K.M. Badi, L. B. Kolawole, T. Afullo, A. Macamo, H. Mweene, and MAGDAS/CPMN Group (2009); Progress report on the global deployment of MAGDAS, *Sun and Geosphere*, in press.
 139. Chakrabarty D., R. Sekar, J. H. Sastri, B. M. Pathan, G. D. Reeves, K. Yumoto, and T. Kikuchi (2010), Evidence for OI 630.0 nm dayglow variations over low latitudes during onset of a substorm, *J. Geophys. Res.*, doi:10.1029/2009JA????, in press.
 140. Fejer B.G., M.E. Olson, J.L. Chau, C. Stolle, H. Luhr, L.P. Goncharenko, K. Yumoto, and T. Nagatsuma (2010), Longitude dependent equatorial ionospheric electrodynamic effects during sudden stratospheric warmings, *J. geophys. Res.*, Vol. 115, A00G03, 9 PP., 2010 doi:10.1029/2010JA015273.
 141. Fukazawa, K., T. Aoyama, T. Ogino, and K. Yumoto (2010), Response of the reconnection electric field and polar cap potential to the IMF and velocity of solar wind, *J. Atmos. Solar-Terres. Phys.*, doi:10.1016/j.jastp.2010.06.002, pp.1-3.
 142. Ikeda A., Yumoto K., Uozumi T., Shinohara M., Nozaki K., Yoshikawa A., Bychkov V.V., and Shevtsov B.M. (2010a); Phase relation between Pi 2-associated ionospheric Doppler velocity and magnetic pulsation observed at midlatitude MAGDAS station, *J. Geophys. Res.*, **115**, A02215, doi 10.1029/2009JA014397, pp.1-7.
 143. Ikeda, A., K. Yumoto, M. Shinohara, K. Nozaki, A. Yoshikawa, M.G. Cardinal, B.M. Shevtsov, V.V. Bychkov, Q. M. Sugon, Jr., and D. McNamara (2010b); Ionospheric observation using FM-CW radar array, *Advance in Geoscience*, in press.
 144. Mahrous, A., Ghamry, E., Elhawary, R., Fathy, I., Yamazaki, Y., Abe, S., Uozumi, T., Yumoto, K., (2010), First MAGDAS Installation at Fayum in Egypt, *Advances in Space Research*, doi: 10.1016/j.asr.2010.04.022, pp.1-5.
 145. Morioka A., Y. Miyoshi, Y. Miyashita, Y. Kasaba, H. Misawa, F. Tsuchiya, R. Kataoka, A. Kadokura, T. Mukai, K. Yumoto, D. J. Menietti, G. Parks, K. Liou, F. Honary, and E. Donovan (2010), Two-step evolution of auroral acceleration at substorm onset, *J. Geophys. Res.*, doi:10.1029/2009JA????, in press.
 146. Park, J., Min, K. W., Summers, D., Hwang, J., Kim, H. J., Horne, R. B., Kirsch, P., Yumoto, K., Uozumi, T., Lühr, H., and Green, J. (2010), Non-stormtime injection of energetic particles into the slot-region between Earth's inner

- and outer electron radiation belts as observed by STSAT-1 and NOAA-POES, *Geophys. Res. Lett.*, Vol. 37, No. 16, L16102, doi:10.1029/2010GL043989, pp. 5.
147. Pilipenko, V., E. Federov, K. Yumoto, A. Ikeda, and T.R. Sun (2010), An analytical model for Doppler frequency variations of ionospheric HF sounding caused by SSC, *J. Geophys. Res.*, doi:10.1029/2000JA900076, in press.
148. Shinbori, A., Y. Nishimura, Y. Tsuji, T. Kikuchi, T. Araki, A. Ikeda, T. Uozumi, R. E. S. Otadoy, H. Utada, J. Ishitsuka, N. B. Trivedi, S. L. G. Dutra, N. J. Schuch, S. Watari, T. Nagatsuma, and K. Yumoto (2010), Anomalous Occurrence Feature of the Preliminary Impulse of Geomagnetic Sudden Commencement (SC) in the South Atlantic Anomaly (SAA) region, *J. Geophys. Res.*, doi:10.1029/2009JA015035, in press.
149. Weimer, D.R., C. R. Clauer, M. J. Engebretson, T. L. Hansen, H. Gleisner, I. Mann, and K. Yumoto (2010), Statistical maps of geomagnetic variations as a function of the interplanetary magnetic field, *J. Geophys. Res.*, in press.
150. Yamazaki, Y., K. Yumoto, T. Uozumi, S. Abe, M. G. Cardinal, D. McNamara, R. Marshall, B. M. Shevtsov and S. I. Solov'yev (2010), Re-examination of Sq-EEJ relationship based on extended magnetometer networks in the east Asian region, *J. Geophys. Res.*, in press.
151. Yumoto, K. and the MAGDAS/CPMN Group (2010); A Review of MAGDAS/CPMN Project during IHY, *Nigerian Journal of Space Research (ISSN 0794-4489)*, Vol. 8, March 30, 2010, DEUTCHETZ Publishers, pp.349-390.

4. ホームページのアドレス

MAGDAS地磁気データベース : <http://magdas.serc.kyushu-u.ac.jp/>

MAGDAS-II地磁気データベース : <http://magdas2.serc.kyushu-u.ac.jp/>

CPMN地磁気データベース :

http://denji102.geo.kyushu-u.ac.jp/denji/obs/cpmn/cpmn_obs_e.html

磁気赤道地磁気データベース :

http://denji102.geo.kyushu-u.ac.jp/denji/obs/equator/eq_obs_e.html