Juno-Ground-Radio Observation Support Tools

*Baptiste Cecconi[1,2,3,4], Philippe Zarka[1,2], Renaud Savalle[3], Pierre Lesidaner[3], Corentin Louis[1,2], Laurent Lamy[1,2], Andree Coffre[2], Laurent Denis[2], Cedric Viou[2], Alexander A Konovalenko[5], Vyacheslav Zakharenko[5], Serge Yerin[5], Anastasia Skoryk[5], Yasumasa Kasaba[6], Hiroaki Misawa[6], Fuminori Tsuchiya[6], Yasuhide Hobara[7], Tomoyuki Nakajo[8], Kasumasa Imai[9], Vladimir Riabov[10], Hanna Rothkaehl[11], Glenn S Orton[12], Tom Momary[12], Jean-Mathias Griessmeier[13], Masafumi Imai[14], Julien N Girard[15], Marin Anderson[16], Nicolas Andre[17,4], Vincent Genot[17,4], Rob Ebert[18], Tobia Carozzi[19], Tomoki Kimura[20], William S Kurth[14], Chuck A Higgins[21,22], John L Mugler[21], Dave Typinski[22], Tracy Clarke[23], Jim Sky[24,22], Richard Flagg[22], Francisco Reyes[22], Wes Greenman[22], Jim Brown[22], Andy Mount[22], Tom Ashcraft[22], Jim Thieman[25,22], Whit Reeve[22], Shing Fung[25,22], Todd King[26], Mark Sharlow[26], Scott Bolton[18]

1. LESIA, Observatoire de Paris, CNRS, PSL Research University, Meudon, France, 2. Station de Radioastronomie de Nancay, Observatoire de Paris/PSL Research University/CNRS/Université d'Orléans, Nancay, France, 3. PADC, Observatoire de Paris/PSL Research University/CNRS, Paris, France, 4. CDPP, CNES/CNRS/Université Paul Sabatier/Observatoire de Paris, Toulouse, France, 5. Institute of Radio Astronomy, Ukrainian Academy of Sciences, Kharkov, Ukraine, 6. Tohoku University, Sendai, Japan, 7. University of Electro-Communications, Tokyo, Japan, 8. Fukui University of Technology, Fukui, Japan, 9. Kochi National College of Technology, Nankoku, Japan, 10. Future University, Hakodate, Japan, 11. Space Research Center, Polish Academy of Sciences, Warsaw, Poland, 12. Jet Propulsion Laboratory, NASA, Pasadena, CA, USA, 13. LPC2E, CNRS/Université d'Orléans, Orléans, France, 14. Department of Physics and Astronomy, University of Iowa, Iowa-City, IA, USA, 15. AIM/IRFU/SAp-CEA, Université Paris Diderot, Saclay, France, 16. California Institute of Technology, Pasadena, CA, USA, 17. IRAP, CNRS, Université Paul Sabatier, Toulouse, France, 18. Space Science Department, Southwest Research Institute, TX, USA, 19. Institute of Space and Geophysics, Chalmers, Onsala, Sweden, 20. RIKEN, Tokyo, Japan, 21. Middle Tennessee State University, Murfreesboro, TN, USA, 22. RadioJOVE, 23. Naval Research Laboratory, Washington DC, USA, 24. Radio-Sky Publishing, USA, 25. NASA-Goddard Space Flight Center, Greenbelt, MD, USA, 26. IGPP, UCLA, Los Angeles, CA, USA

In the frame of the NASA/Juno mission, an international support activity with observations in the low frequency radio range has been set up. We are proposing a new set of tools directed to data providers as well as users, in order to ease data sharing and discovery. The data service we will be using is EPN-TAP, a planetary science data access protocol developed by Europlanet-VESPA (Virtual European Solar and Planetary Access). This protocol is derived from IVOA (International Virtual Observatory Alliance) standards. Data from all major decametric radio instruments will contribute: Nançay Decameter Array (France), LOFAR (France, Sweden, Poland), URAN (Ukraine), LWA (USA), Iitate Radio Observatory (Japan), etc. Amateur radio data from the RadioJOVE project is also available. We will first introduce the VO tools and concepts of interest for the planetary radioastronomy community. We will then present the various data formats now used for such data services, as well as their associated metadata. We will finally show various tools that make use of this shared datasets. This activity also supports the development of the ESA/JUICE (Jupiter Icy Moon Explorer) mission, and that of the planetary sciences virtual observatory.

Keywords: Jupiter, Decametric Radio Emissions, Juno, Virtual Observatory

