

## THIRTIETH GENERAL ASSEMBLY

### RESOLUTIONS PRESENTED TO THE XXXth GENERAL ASSEMBLY

#### RESOLUTION B2

##### on The Third Realization of the International Celestial Reference Frame

*Proposed by the IAU Working Group on the Third Realization of the International Celestial Reference Frame*

The XXX General Assembly of the International Astronomical Union,

##### **noting**

1. that Resolution B2 of the XXIIIrd General Assembly (1997) resolved “that, as from 1 January 1998, the IAU celestial reference system shall be the International Celestial Reference System (ICRS)”;
2. that Resolution B3 of the XXVIIth General Assembly (2009) resolved “that, as from 1 January 2010, the fundamental astrometric realization of the International Celestial Reference System (ICRS) shall be the Second Realization of the International Celestial Reference Frame (ICRF2)”;
3. that Resolution B3 of the XXVIIth General Assembly (2009) resolved “that the organizations responsible for astrometric and geodetic VLBI observing programs (e.g. IERS, IVS) take appropriate measures to continue existing and develop improved VLBI observing and analysis programs to both maintain and improve ICRF2”;

##### **recognizing**

4. that since the establishment of ICRF2, continued and new VLBI observing programs conducted by relevant organizations (e.g. IVS, the International VLBI Service for geodesy and astrometry) and individuals on various VLBI arrays and at multiple radio frequencies, have almost doubled the volume of astrometric and geodetic VLBI data collected on ICRF2 and add-on radio sources;
5. that since the establishment of ICRF2, improved instrumentation, network coverage, observation strategies, and astronomical and geophysical modeling have significantly improved the VLBI data quality and subsequent astrometric analysis of those data;

6. that an IAU Working Group was formed in 2012 to generate the Third Realization of the International Celestial Reference Frame using the entire astrometric and geodetic VLBI data set and state-of-the-art astronomical and geophysical modeling, with the mandate to complete that realization for presentation at the XXXth General Assembly (2018);

7. that the aforementioned Working Group has generated a prospective Third Realization of the International Celestial Reference Frame, in a coordinate frame aligned onto ICRF2, which represents a significant improvement in terms of source characterization, position accuracy and total number of sources, and thus represents a significant improvement in the fundamental realization of the ICRS, compared to ICRF2 adopted at the XXVIIth General Assembly (2009);

**resolves**

8. that, as from 1 January 2019, the fundamental realization of the International Celestial Reference System (ICRS) shall be the Third Realization of the International Celestial Reference Frame (ICRF3), as constructed by the IAU Working Group on the Third Realization of the International Celestial Reference Frame;

9. that the organizations responsible for astrometric and geodetic VLBI observing programs (e.g. IVS) take appropriate measures to continue and develop such programs, at multiple radio frequencies and with a specific effort on the southern hemisphere, to both maintain and improve ICRF3;

10. that the organizations responsible for defining high-accuracy reference frames at other wavelengths take appropriate measures, together with the International Earth Rotation and Reference Systems Service (IERS), to align those reference frames onto ICRF3 with the highest possible accuracy.

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