The 6C Survey of Radio Sources - II. The Zone 30°< Dec <51°, $08^h30^m < RA < 17^h30^m$

Hales, Baldwin and Warner (1988)

Documentation for the Computer-Readable Version

N. A. Oliversen

Doc. No. NSSDC/WDC-A-R&S 93-24

July 1993
(Revised March 1994)

National Space Science Data Center (NSSDC)/
World Data Center A for Rockets and Satellites (WDC-A-R&S)
National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Abstract

This catalogue contains the second section of the 6C Cambridge survey of radio sources at 151 MHz, covering the region from 30° to 51° in declination and between 8^h30^m and 17^h30^m in right ascension. The survey has an angular resolution of 4.′2 x 4.′2 x cosec(dec). Data include the source positions (B1950), peak flux density, integrated flux density, contour map panel number and contour map field names. Its limiting flux density depends weakly on right ascension and strongly on declination and is 190 mJy in the central part of the declination strip but rises to over 400 mJy near its northern and southern boundaries. This part of the survey contains 8278 sources, covering an area of 2030 square degrees.

1 Introduction

A copy of this document should be distributed with every copy of the machine-readable catalog.

1.1 Description

"The 6C Survey of Radio Sources - II. The Zone 30°< Dec <51°, 08^h30^m < RA < 17^h30^m" (6CSRSII) contains a compilation of radio source observations made with the use of an (non-tracking) Earth-rotation aperture synthesis telescope comprising many small aerial arrays on an east-west baseline operating at 151 MHz. This paper is the second in a series: Details on the design and operation of the telescope and the reduction of the survey were first discussed in Baldwin et al. (1985). The third paper in this series was published in Hales et al. (1990) and the fourth paper in the series was published in Hales et al. (1991).

The catalogue contains a listing of 8278 radio sources ordered by increasing right ascension from 8^h30^m to 17^h30^m. The survey is centered on a declination of 41° and includes from declination 30° to 50°. Five fields have been included in this survey: 0940+41, 1120+41, 1300+41, 1440+41, and 1620+41.

Attenuation corrections were applied to all flux densities and maps using tables derived for each synthesis. Flux densities are on the scale of Roger, Bridle, and Costain (1973) (RBC). The authors believe the flux density scale is consistent with the RBC scale to within ±5%. See 6CSRSII for details on source selection criterion and error analysis.

Source positions have been systematically adjusted (by 0.6s in right ascension and by up to 10″ in declination) to agree with known positions of bright sources. The residual rms scatter in the corrected positions of the reference sources relative to their true positions is estimated to be ±4-5″ in each coordinate. See 6CSRSII for details.

Note that this file only contains the catalogue of radio sources. It is intended to be used with the radio maps originally published on microfiche in Hales, Baldwin and Warner (1988). The source lists and FITS format maps for the four regions of the 6C survey published t-date have been placed

on a CDROM entitled "Images from the Radio Universe", which is available from the address below. A nominal fee may be charged for such requests.

Prof. Jim Condon
NRAO
Edgemont Road
Charlottesville, Virginia 22903-2475

1.2 Reference

Hales, S.E.G., Baldwin, J. E. and Warner, P. J. 1988, MNRAS, 234, 919.

2 Structure

2.1 The File as a Whole

"The 6C Survey of Radio Sources - II. The Zone 30°< Dec <51°, $08^h30^m < RA < 17^h30^m$" consists of a single fixed-block file of 8278 50-byte records. The original file contained 80-byte records. Detailed descriptions of some of the fields in the file are given in the following sections.

2.2 Catalog File

Bytes	Units	Suggested Format	Item
1- 2	h	I2	Right ascension (B1950)
4- 5	min	I2	Right ascension (B1950)
7-10	s	F4.1	Right ascension (B1950)
12-14	°	I3	Declination (B1950)
16-17	′	I2	Declination (B1950)
19-20	″	I2	Declination (B1950)
23-27	Jy	F5.2	Flux density (peak)
30-34	Jy	F5.2	Flux density (integ.)
35		A1	Integrated flux flag
38-39		I2	Contour map panel number
41		A1	The character ":"
43-49		A7	Contour map field name

Table 1: Catalog Record Format

Flux density (peak): Source peak flux density at 151 MHz.

Flux density (integrated): Source integrated flux density at 151 MHz. Integrated flux densities were carried out for sources with apparent flux densities above 483 mJy. The integration was carried out to a limiting level of 10% of the fitted peak (or for 103 mJy for sources having apparent flux densities < 1.03 Jy). Note that for unresolved sources the integrated flux value can fall below the peak value.

Integrated flux flag: If the column is marked with a dash (-), the peak flux was not strong enough to calculate the integrated flux. If the column is marked with an asterisk (*), the peak flux was strong enough to qualify for integration, but it has been integrated into a brighter adjoining peak.

Contour map panel number: This column contains the panel number of the contour map in which the source appears in the survey. Each map field is divided into 32 contour panels. The panel number and the map field name tell the user where to look up the source of interest in the published contour map.

Contour map field name: This column contains the name of the field in which the source appears. There are five fields in this survey: 0940+41, 1120+41, 1300+41, 1440+41, and 1620+41. The panel number and the map field name tell the user where to look up the source of interest in the published contour map.

3 History

3.1 Remarks and Modification

"The 6C Survey of Radio Sources - II. The Zone 30°< Dec <51°, $08^h30^m < RA < 17^h30^m$" was received by the Astronomical Data Center (ADC), NASA Goddard Space Flight Center, from Dr. Heinz Andernach. The catalog was originally submitted by the first author, Dr. Sally Hales.

The integrated flux flag column was added by the ADC/CDS by extracting the character information from the Integrated flux density column. This was done to avoid mixing character and numeric information in the same column.

4 Reference to the Documentation

Baldwin, J.E., Boysen, R.C., Hales, S.E.G., Jennings, J.E., Waggett, P.C., Warner, P.J. and Wilson, D.M.A. 1985, MNRAS, 217, 717

Hales, S.E.G., Baldwin, J.E. and Warner, P.J. 1988, MNRAS, 234, 919

Hales, S.E.G. 1990, MNRAS, 246, 256

Hales, S.E.G. 1991, MNRAS, 251, 46

Roger, R.S., Bridle, A.H. and Costain, C.H. 1973, AJ, 78, 1030