

A database of circumstellar OH masers

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Abstract. We present a new database of circumstellar OH masers at 1612, 1665, and 1667 MHz. The database contains 10774 observations and 2274 stars with OH maser emission detected. The database contains flux densities and velocities of the two strongest maser peaks, the expansion velocity of the shell and the radial velocity of the star. Access to the database is possible over the Web (www.hs.uni-hamburg.de/maserdb), allowing cone searches for individual objects and lists of objects. Object selection is possible on the base of flux densities and velocities.

Keywords. masers, catalogs, stars: AGB and post-AGB, stars: late-type

1. Introduction

Since the discovery of masers 40 years ago several thousand observations have been made to detect masers in circumstellar shells. Comfortable tools to access these observations are lacking. The last catalogs listing 1612 MHz OH masers in AGB stars (“OH/IR stars”) were published by te Lintel Hekkert *et al.* (1989) and Benson *et al.* (1990). The te Lintel Hekkert *et al.* catalog contains detected OH masers with their flux densities and velocities and covers the literature until 1984. The Benson *et al.* catalog lists references to OH maser observations and covers the years until 1989. The number of detected 1612 OH Masers listed are 439 and 713 respectively. Since then the number of detected masers has been almost tripled.

2. The database

The search of the literature started with the contents of the te Lintel Hekkert *et al.* catalog. The additional literature search covers the years 1984 – 2006. The database is considered to be (almost) complete for 1612 MHz detections, but contains no non-detections published prior to 1984. For the main lines only measurements published after 1984 are contained. Only galactic masers were taken into account.

The database contains the coordinates of the maser, as well as flux densities and velocities of the two strongest peaks. For the 1612 MHz masers these are usually the outermost peaks, from which the radial velocity of the stars and the expansion velocity of the circumstellar shells are calculated. For more complex spectra, as usually seen for main-line masers, radial and expansion velocities are calculated from the outermost peaks listed in the reference paper. Modifications to the original data have been logged on the reference pages. A page compiling statistical data (galactic distribution, velocity distributions etc.) gives an overview on the content of the database.

Database search is possible according to frequencies, coordinates, flux densities, and velocities.

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Figure 1. Input mask. Address: www.hs.uni-hamburg.de/maserdb

Source Name	Frequency	Coordinates (2000)		v _{rad}	v _{exp}	v _{blac}	v _{rot}	f _{blac}	f _{rot}	Ref.
	[MHz]			[km/s]	[km/s]	[km/s]	[km/s]	[Jy]	[Jy]	
IRAS 18236-0447	1612	18 26 20.200	-04 45 42.00	-25.8	11.0	-36.9	-14.8	2.570	0.710	DAV93A
IRAS 18236-0447	1612	18 26 20.200	-04 45 42.00	-25.0	11.0	-36.1	-14.0	3.560	0.960	LIN91A
IRAS 18236-0447	1667	18 26 20.200	-04 45 42.00	-25.3	11.0	-36.3	-14.4	0.090	0.040	DAV93B
IRAS 18245-0342	1612	18 27 12.800	-03 40 15.00	---	---	---	---	< 0.150	---	DAV93A
IRAS 18245-0342	1667	18 27 12.800	-03 40 15.00	23.5	18.0	5.6	41.5	0.160	0.080	DAV93B
IRAS 18245-0342A	1667	18 27 12.800	-03 40 15.00	241.6	---	241.6	---	0.090	0.090	DAV93B
IRAS 18248-0102	1612	18 27 24.100	-01 00 46.00	---	---	---	---	< 0.200	---	LSQ92
IRAS 18251+0023	1612	18 27 44.000	+00 25 12.00	100.8	11.3	89.5	112.2	1.293	1.270	LEW94
IRAS 18256-0004	1612	18 28 14.000	-00 02 48.00	---	---	---	---	< 0.150	---	DAV93A
IRAS 18269+0116	1612	18 29 31.200	+01 18 40.00	---	---	---	---	< 0.150	---	DAV93A
IRAS 18270+0326	1612	18 29 34.600	+03 28 12.00	-35.4	7.3	-42.7	-28.1	1.036	1.345	LEW94
IRAS 18270+0326	1665	18 29 34.600	+03 28 12.00	-41.7	---	-41.7	---	0.100	---	LEW97
IRAS 18270+0326	1667	18 29 34.600	+03 28 12.00	-35.3	6.4	-41.7	-29.0	0.079	0.042	LEW97

Figure 2. Sample output

References

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