



**HAL**  
open science

## **z-GAL: A NOEMA spectroscopic redshift survey of bright Herschel galaxies. I. Overview (Corrigendum)**

P. Cox, R. Neri, S. Berta, D. Ismail, F. Stanley, A. Young, S. Jin, T. Bakx, A. Beelen, H. Dannerbauer, et al.

### ► To cite this version:

P. Cox, R. Neri, S. Berta, D. Ismail, F. Stanley, et al.. z-GAL: A NOEMA spectroscopic redshift survey of bright Herschel galaxies. I. Overview (Corrigendum). *Astronomy & Astrophysics*, 2024, 681, 10.1051/0004-6361/202346801e . insu-04838888

**HAL Id: insu-04838888**

**<https://insu.hal.science/insu-04838888v1>**

Submitted on 15 Dec 2024

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

# **z-GAL: A NOEMA spectroscopic redshift survey of bright *Herschel* galaxies**

## **I. Overview (Corrigendum)**

P. Cox<sup>1</sup>, R. Neri<sup>2</sup>, S. Berta<sup>2</sup>, D. Ismail<sup>3</sup>, F. Stanley<sup>2</sup>, A. Young<sup>4</sup>, S. Jin<sup>5,6</sup>, T. Bakx<sup>7,8,9</sup>, A. Beelen<sup>3</sup>,  
H. Dannerbauer<sup>10,11</sup>, M. Krips<sup>2</sup>, M. Lehnert<sup>12</sup>, A. Omont<sup>1</sup>, D. A. Riechers<sup>13</sup>, A. J. Baker<sup>4,14</sup>, G. Bendo<sup>15</sup>,  
E. Borsato<sup>16</sup>, V. Buat<sup>3</sup>, K. Butler<sup>2</sup>, N. Chartab<sup>17</sup>, A. Cooray<sup>17</sup>, S. Dye<sup>18</sup>, S. Eales<sup>19</sup>, R. Gavazzi<sup>3</sup>, D. Hughes<sup>20</sup>,  
R. Ivison<sup>21,22,23,24</sup>, B. M. Jones<sup>13</sup>, L. Marchetti<sup>25,26</sup>, H. Messias<sup>27,28</sup>, A. Nanni<sup>29,30</sup>, M. Negrello<sup>19</sup>,  
I. Perez-Fournon<sup>10,11</sup>, S. Serjeant<sup>31</sup>, S. Urquhart<sup>31</sup>, C. Vlahakis<sup>32</sup>, A. Weiß<sup>33</sup>, P. van der Werf<sup>34</sup>, and C. Yang<sup>7</sup>

<sup>1</sup> Sorbonne Université, UPMC Université Paris 6 and CNRS, UMR 7095, Institut d'Astrophysique de Paris, 98bis Boulevard Arago, 75014 Paris, France

e-mail: pierre.cox@iap.fr

<sup>2</sup> Institut de Radioastronomie Millimétrique (IRAM), 300 rue de la Piscine, 38400 Saint-Martin-d'Hères, France

<sup>3</sup> Aix-Marseille Université, CNRS and CNES, Laboratoire d'Astrophysique de Marseille, 38 Rue Frédéric Joliot-Curie, 13388 Marseille, France

<sup>4</sup> Department of Physics and Astronomy, Rutgers, The State University of New Jersey, 136 Frelinghuysen Road, Piscataway, NJ 08854-8019, USA

<sup>5</sup> Cosmic DAWN Center, Radmandsgade 62, 2200 Copenhagen N, Denmark

<sup>6</sup> DTU Space, Technical University of Denmark, Elektrovej 327, 2800 Kgs Lyngby, Denmark

<sup>7</sup> Department of Space, Earth and Environment, Chalmers University of Technology, Onsala Space Observatory, 439 92 Onsala, Sweden

<sup>8</sup> Division of Particle and Astrophysical Science, Graduate School of Science, Nagoya University, Aichi 464-8602, Japan

<sup>9</sup> National Astronomical Observatory of Japan, 2-21-1, Osawa, Mitaka, Tokyo 181-8588, Japan

<sup>10</sup> Instituto Astrofísica de Canarias (IAC), 38205 La Laguna, Tenerife, Spain

<sup>11</sup> Universidad de La Laguna, Dpto. Astrofísica, 38206 La Laguna, Tenerife, Spain

<sup>12</sup> Centre de Recherche Astrophysique de Lyon – CRAL, CNRS UMR 5574, UCBL1, ENS Lyon, 9 Avenue Charles André, 69230 Saint-Genis-Laval, France

<sup>13</sup> I. Physikalisches Institut, Universität zu Köln, Zùlpicher Strasse 77, 50937 Köln, Germany

<sup>14</sup> Department of Physics and Astronomy, University of the Western Cape, Robert Sobukwe Road, Bellville 7535, Cape Town, South Africa

<sup>15</sup> UK ALMA Regional Center Node, Jodrell Bank Center for Astrophysics, Department of Physics and Astronomy, The University of Manchester, Oxford Road, Manchester M13 9PL, UK

<sup>16</sup> Dipartimento di Fisica & Astronomia “G. Galilei”, Università di Padova, vicolo dell'Osservatorio 3, Padova 35122, Italy

<sup>17</sup> University of California Irvine, Department of Physics & Astronomy, FRH 2174, Irvine, CA 92697, USA

<sup>18</sup> School of Physics and Astronomy, University of Nottingham, University Park, Nottingham NG7 2RD, UK

<sup>19</sup> School of Physics and Astronomy, Cardiff University, Queens Building, The Parade, Cardiff CF24 3AA, UK

<sup>20</sup> Instituto Nacional de Astrofísica, Óptica y Electrónica, Astrophysics Department, Apdo 51 y 216, Tonantzintla, Puebla 72000, Mexico

<sup>21</sup> European Southern Observatory, Karl-Schwarzschild-Strasse 2, 85748 Garching, Germany

<sup>22</sup> Department of Physics and Astronomy, Macquarie University, North Ryde, New South Wales, Australia

<sup>23</sup> School of Cosmic Physics, Dublin Institute for Advanced Studies, 31 Fitzwilliam Place, Dublin D02 XF86, Ireland

<sup>24</sup> Institut for Astronomy, University of Edinburgh, Blackford Hill, Edinburgh EH9 3HJ, UK

<sup>25</sup> Departement of Astronomy, University of Cape Town, 7701 Rondebosch, Cape Town, South Africa

<sup>26</sup> Istituto Nazionale di Astrofisica, Istituto di Radioastronomia – Italian ARC, Via Piero Gobetti 101, 40129 Bologna, Italy

<sup>27</sup> Joint ALMA Observatory, Alonso de Córdova 3107, Vitacura 763-0355, Santiago de Chile, Chile

<sup>28</sup> European Southern Observatory, Alonso de Córdova 3107, Vitacura, Casilla 19001, Santiago de Chile, Chile

<sup>29</sup> National Centre for Nuclear Research, ul. Pasteura 7, 02-093 Warsaw, Poland

<sup>30</sup> INAF – Osservatorio astronomico d'Abruzzo, Via Maggini, SNC 64100 Teramo, Italy

<sup>31</sup> Department of Physical Sciences, The Open University, Milton Keynes MK7 6AA, UK

<sup>32</sup> National Radio Astronomy Observatory, 520 Edgemont Road, Charlottesville, VA 22903, USA

<sup>33</sup> Max-Planck-Institut für Radioastronomie, Auf dem Hügel 69, 53121 Bonn, Germany

<sup>34</sup> Leiden University, Leiden Observatory, PO Box 9513, 2300 RA Leiden, The Netherlands

A&A, 678, A26 (2023), <https://doi.org/10.1051/0004-6361/202346801>

**Key words.** galaxies: high-redshift – galaxies: ISM – submillimeter: galaxies – gravitational lensing: strong – radio lines: ISM – errata, addenda

The following table replaces Table A.5 with the correct *Herschel* flux densities for three of the sources, namely HeLMS-6, HeLMS-8, and HeLMS-9.

**Table 1.** Northern galactic plane and equatorial sources with previously available spectroscopic redshift measurements from the HerBS, HeLMS, and HerS catalogues.

Source name		<i>Herschel</i> Coordinates (J2000.0)		Flux density			$z_{\text{spec}}$	
<i>Herschel</i> Name	Other			<i>Herschel</i> $S_{250\mu\text{m}}$	$S_{350\mu\text{m}}$	SCUBA-2 $S_{850\mu\text{m}}$		
(mJy)								
HerBS Sources								
H-ATLAS 134429.5+303034	HerBS-1	13:44:29.5	+30:30:34	461.9±5.8	465.7±6.5	343.3±7.1	90.3±5.3	2.30
H-ATLAS 114637.9-001132	HerBS-2	11:46:37.9	-00:11:32	316.0±6.6	357.9±7.4	291.8±7.7	98.2±5.4	3.26
H-ATLAS 132630.1+334408	HerBS-3	13:26:63.0	+33:44:08	190.5±5.6	281.3±5.9	278.6±7.5	73.8±5.0	2.95
H-ATLAS 083051.0+013225	HerBS-4	08:30:51.0	+01:32:25	248.5±7.5	305.3±8.1	269.1±8.7	98.7±5.4	3.63
H-ATLAS 125632.5+233627	HerBS-5	12:56:32.5	+23:36:27	209.3±5.6	288.5±6.0	264.0±7.0	97.6±5.0	3.56
H-ATLAS 132427.0+284450	HerBS-6	13:24:27.0	+28:44:50	342.3±5.6	371.0±5.9	250.9±6.9	38.1±5.6	1.68
H-ATLAS 132859.2+292327	HerBS-7	13:28:59.2	+29:23:27	268.4±4.4	296.3±4.8	248.9±5.9	77.4±6.5	2.78
H-ATLAS 084933.4+021442	HerBS-8	08:49:33.4	+02:14:42	216.7±7.5	248.5±8.2	208.6±8.6	36.3±5.8	2.41
H-ATLAS 125135.3+261458	HerBS-9	12:51:35.3	+26:14:58	157.9±5.9	202.2±6.0	206.8±6.9	83.5±5.5	3.68
H-ATLAS 113526.2-014606	HerBS-10	11:35:26.2	-01:46:06	278.8±7.4	282.9±8.2	204.0±8.6	73.2±5.3	3.13
H-ATLAS 133008.6+245900	HerBS-12	13:30:08.6	+24:59:00	271.2±5.4	278.2±5.9	203.5±6.9	67.7±6.4	3.11
H-ATLAS 142413.9+022303	HerBS-13	14:24:13.9	+02:23:03	112.2±7.3	182.2±8.2	193.3±8.5	89.7±5.4	4.24
H-ATLAS 141351.9-000026	HerBS-15	14:13:51.9	-00:00:26	188.6±7.4	217.0±8.1	176.4±8.7	44.0±4.9	2.48
H-ATLAS 090311.6+003907	HerBS-19	09:03:11.6	+00:39:07	133.2±7.4	186.1±8.2	165.2±8.8	87.7±6.3	3.04
H-ATLAS 132504.4+311534	HerBS-20	13:25:04.4	+31:15:34	240.6±5.4	226.6±6.0	164.9±7.3	26.2±4.9	1.84
H-ATLAS 133846.5+255055	HerBS-29	13:38:46.5	+25:50:55	159.0±5.8	183.1±6.0	137.6±7.5	36.9±5.8	2.34
H-ATLAS 132301.7+341649	HerBS-30	13:23:01.7	+34:16:49	124.1±5.6	144.5±6.0	137.0±7.2	48.2±4.7	2.19
H-ATLAS 083304.9+000109	HerBS-31	12:56:52.5	+00:01:09	133.9±5.8	164.1±6.0	131.8±7.4	41.5±4.9	2.79
H-ATLAS 091840.8+023048	HerBS-32	09:18:40.8	+02:30:48	125.7±7.2	150.7±8.2	128.4±8.7	32.9±5.7	2.58
H-ATLAS 133543.0+300402	HerBS-35	13:35:43.0	+30:04:02	136.6±5.4	145.7±5.8	125.0±6.9	35.8±4.7	2.68
H-ATLAS 125125.8+254930	HerBS-52	12:51:25.8	+25:49:30	57.4±5.8	96.8±5.9	109.4±7.2	39.4±5.8	3.44
H-ATLAS 091304.9-005344	HerBS-59	09:13:04.9	-00:53:44	118.2±6.4	136.8±7.4	104.3±7.7	42.0±5.4	2.63
H-ATLAS 130118.0+253708	HerBS-64	13:01:18.0	+25:37:08	60.2±4.8	101.1±5.3	101.5±6.4	54.3±4.6	4.04
H-ATLAS 115820.1-013752	HerBS-66	11:58:20.1	-01:37:52	119.8±6.8	123.7±7.7	101.5±7.9	25.8±4.2	2.19
H-ATLAS 113243.0-005108	HerBS-71	11:32:43.0	-00:51:08	67.8±7.3	105.8±8.2	99.8±8.8	<i>10.8±5.1</i>	2.58
H-ATLAS 083344.9+000109	HerBS-88	08:33:44.9	+00:01:09	71.0±7.6	96.0±8.1	95.9±8.8	16.3±5.8	<i>3.10</i>
H-ATLAS 113803.6-011737	HerBS-96	11:38:03.6	-01:17:37	85.1±7.3	98.4±8.2	94.8±8.8	11.3±5.1	<i>3.15</i>
H-ATLAS 113833.3+004909	HerBS-100	11:38:33.3	+00:49:09	96.8±7.3	106.4±8.1	93.4±8.7	6.3±5.9	2.22
HeLMS and HerS Sources								
HERMES J233255.5-031134	HeLMS-2	23:32:55.4	-03:11:34	271±6	336±6	263±8		2.6895
HERMES J004410.2+011821	HeLMS-4	00:44:10.2	+01:18:21	113±7	177±6	209±8		4.1625
HERMES J234051.3-041937	HeLMS-5	23:40:51.3	-04:19:37	151±6	209±6	205±8		3.5027
HERMES J233620.7-060826	HeLMS-6	23:36:20.8	-06:08:28	193±7	252±6	202±8		3.4346
HERMES J232439.4-043934	HeLMS-7	23:24:39.5	-04:39:36	214±7	218±7	172±9		2.4726
HERMES J004714.1+032453	HeLMS-8	00:47:14.2	+03:24:54	312±6	244±7	168±8		2.2919
HERMES J004723.3+015749	HeLMS-9	00:47:23.6	+01:57:51	398±6	320±6	164±8		1.441
HERMES J005258.4+061319	HeLMS-10	00:52:58.6	+06:13:19	88±6	129±6	155±7		4.3726
HERMES J001615.8+032433	HeLMS-13	00:16:15.7	+03:24:35	195±6	221±6	149±7		2.765
HERMES J233255.7-053424	HeLMS-15	23:32:55.7	-05:34:26	148±6	187±6	147±9		2.4022
HERMES J005159.4+062240	HeLMS-18	00:51:59.5	+06:22:41	166±6	195±6	135±7		2.392
HERMES J001626.0+042613	HeLMS-22	00:16:26.0	+04:26:13	117±7	151±6	127±7		2.5093
HERMES J002220.9-015520	HeLMS-29	00:22:20.9	-01:55:24	66±6	102±6	121±7		5.1614
HERS J020941.1+001557	HerS-1	02:09:41.1	+00:15:58	826±7	912±7	718±8		2.5534
HERS J011640.1-000454	HerS-4	01:16:40.1	-00:04:54	137±7	196±7	190±8		3.791 <sup>a</sup>
HERS J010301.2-003300	HerS-6	01:03:01.2	-00:33:01	121±7	147±6	130±8		2.2153

**Notes.** The source names and *Herschel* flux densities are from Bakx et al. (2018) and Nayyeri et al. (2016). The SCUBA-2 flux densities of the HerBS sources are the revised values from Bakx et al. (2020b). The SCUBA-2 flux densities indicated in italics are classified as non-detections, as discussed in Sect. 3 of Bakx et al. (2018). The sources are listed in order of decreasing  $S_{500\mu\text{m}}$  flux density. The references to the spectroscopic redshift measurements are given in Bakx et al. (2018) and Nayyeri et al. (2016); for the HeLMS and HerS sources, the  $z_{\text{spec}}$  values have been updated for the sources included in Riechers et al. (2021) and Maresca et al. (2022; and references therein); for HerBS-52 and HerBS-64, the spectroscopic redshifts are from Bakx et al. (2020a). Spectroscopic redshifts in italics are derived from a single line detection and are therefore considered tentative. (a) The spectroscopic redshift of HerS-4 was measured with the Large Millimeter Telescope (A. Baker, priv. comm.).

**Acknowledgements.** We would like to thank Matus Ryback for pointing out the error that was made in the flux densities of some of the sources in Table A.5.

## References

Bakx, T. J. L. C., Eales, S. A., Negrello, M., et al. 2018, *MNRAS*, **473**, 1751

Bakx, T. J. L. C., Dannerbauer, H., Frayer, D., et al. 2020a, *MNRAS*, **496**, 2372

Bakx, T. J. L. C., Eales, S. A., Negrello, M., et al. 2020b, *MNRAS*, **494**, 10

Maresca, J., Dye, S., Amvrosiadis, A., et al. 2022, *MNRAS*, **512**, 2426

Nayyeri, H., Keele, M., Cooray, A., et al. 2016, *ApJ*, **823**, 17

Riechers, D. A., Cooray, A., Pérez-Fournon, I., & Neri, R. 2021, *ApJ*, **913**, 141