



**HAL**  
open science

## Tensile strength of $67\text{P}$ /Churyumov-Gerasimenko nucleus material from overhangs (Corrigendum)

Nicholas Attree, Olivier Groussin, Laurent Jorda, D. Nébouy, N. Thomas, Y. Brouet, E. Kührt, F. Preusker, F. Scholten, J. Knollenberg, et al.

### ► To cite this version:

Nicholas Attree, Olivier Groussin, Laurent Jorda, D. Nébouy, N. Thomas, et al.. Tensile strength of  $67\text{P}$ /Churyumov-Gerasimenko nucleus material from overhangs (Corrigendum). *Astronomy and Astrophysics - A&A*, 2018, 614, pp.C2. 10.1051/0004-6361/201732155e . insu-03717066

**HAL Id: insu-03717066**

**<https://insu.hal.science/insu-03717066>**

Submitted on 8 Jul 2022

**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.

# Tensile strength of 67P/Churyumov-Gerasimenko nucleus material from overhangs (Corrigendum)

N. Attree<sup>1</sup>, O. Groussin<sup>1</sup>, L. Jorda<sup>1</sup>, D. Nébouy<sup>1</sup>, N. Thomas<sup>2</sup>, Y. Brouet<sup>2</sup>, E. Kührt<sup>3</sup>, F. Preusker<sup>3</sup>, F. Scholten<sup>3</sup>, J. Knollenberg<sup>3</sup>, P. Hartogh<sup>4</sup>, H. Sierks<sup>4</sup>, C. Barbieri<sup>5</sup>, P. Lamy<sup>1</sup>, R. Rodrigo<sup>6,7</sup>, D. Koschny<sup>8</sup>, H. Rickman<sup>9,10</sup>, H. U. Keller<sup>3,11</sup>, M. F. A'Hearn<sup>12</sup>, A.-T. Auger<sup>1</sup>, M. A. Barucci<sup>13</sup>, J.-L. Bertaux<sup>14</sup>, I. Bertini<sup>5</sup>, D. Bodewits<sup>12</sup>, S. Boudreault<sup>4</sup>, G. Cremonese<sup>19</sup>, V. Da Deppo<sup>17</sup>, B. Davidsson<sup>7</sup>, S. Debei<sup>16</sup>, M. De Cecco<sup>18</sup>, J. Deller<sup>4</sup>, M. R. El-Maarry<sup>2</sup>, S. Fornasier<sup>13</sup>, M. Fulle<sup>19</sup>, P. J. Gutiérrez<sup>20</sup>, C. Güttler<sup>4</sup>, S. Hviid<sup>3</sup>, W.-H. Ip<sup>21</sup>, G. Kovacs<sup>4</sup>, J. R. Kramm<sup>4</sup>, M. Küppers<sup>22</sup>, L. M. Lara<sup>20</sup>, M. Lazzarin<sup>5</sup>, J. J. Lopez Moreno<sup>20</sup>, S. Lowry<sup>23</sup>, S. Marchi<sup>24</sup>, F. Marzari<sup>5</sup>, S. Mottola<sup>4</sup>, G. Naletto<sup>5,17,15</sup>, N. Oklay<sup>3</sup>, M. Pajola<sup>25</sup>, I. Toth<sup>26</sup>, C. Tubiana<sup>4</sup>, J.-B. Vincent<sup>3</sup>, and X. Shi<sup>4</sup>

<sup>1</sup> Aix-Marseille Univ., CNRS, Laboratoire d'Astrophysique de Marseille (LAM), rue Frédéric Joliot-Curie, 13388 Marseille CEDEX 13, France

e-mail: [Nicholas.Attree@lam.fr](mailto:Nicholas.Attree@lam.fr)

<sup>2</sup> Physikalisches Institut, Sidlerstr. 5, University of Bern, 3012 Bern, Switzerland

<sup>3</sup> Institute of Planetary Research, DLR, Rutherfordstrasse 2, 12489 Berlin, Germany

<sup>4</sup> Max-Planck-Institut für Sonnensystemforschung, 37077 Göttingen, Germany

<sup>5</sup> Department of Physics and Astronomy, Padova University, Vicolo dell'Osservatorio 3, 35122 Padova, Italy

<sup>6</sup> Centro de Astrobiología (INTA-CSIC), 28691 Villanueva de la Canada, Madrid, Spain

<sup>7</sup> International Space Science Institute, Hallerstrasse 6, 3012 Bern, Switzerland

<sup>8</sup> Scientific Support Office, European Space Agency, 2201 Noordwijk, The Netherlands

<sup>9</sup> Department of Physics and Astronomy, Uppsala University, Box 516, 75120 Uppsala, Sweden

<sup>10</sup> PAS Space Research Center, Bartycka 18A, 00716 Warszawa, Poland

<sup>11</sup> Institute for Geophysics and Extraterrestrial Physics, TU Braunschweig 38106, Germany

<sup>12</sup> Department of Astronomy, University of Maryland, College Park, MD 20742-2421, USA

<sup>13</sup> LESIA, Obs. de Paris, CNRS, Univ. Paris 06, Univ. Paris-Diderot, 5 place J. Janssen, 92195 Meudon, France

<sup>14</sup> LATMOS, CNRS/UVSQ/IPSL, 11 boulevard d'Alembert, 78280 Guyancourt, France

<sup>15</sup> Centro di Ateneo di Studi ed Attività Spaziali "Giuseppe Colombo" (CISAS), University of Padova, via Venezia 15, 35131 Padova, Italy

<sup>16</sup> Department of Industrial Engineering, University of Padova, 35131 Padova, Italy

<sup>17</sup> CNR-IFN UOS Padova LUXOR, via Trasea 7, 35131 Padova, Italy

<sup>18</sup> UNITN, Università di Trento, via Mesiano 77, 38100 Trento, Italy

<sup>19</sup> INAF - Osservatorio Astronomico, via Tiepolo 11, 34143 Trieste, Italy

<sup>20</sup> Instituto de Astrofísica de Andalucía (CSIC), Glorieta de la Astronomía s/n, 18008 Granada, Spain

<sup>21</sup> Institute for Space Science, Nat. Central Univ., 300 Chung Da Rd., 32054 Chung-Li, Taiwan

<sup>22</sup> Operations Department, European Space Astronomy Centre ESA, P.O. Box 78, 28691 Villanueva de la Canada, Madrid, Spain

<sup>23</sup> Centre for Astrophysics and Planetary Science, School of Physical Sciences (SEPnet), University of Kent, Canterbury CT2 7NH, UK

<sup>24</sup> Southwest Research Institute, 1050 Walnut St., Boulder, CO 80302, USA

<sup>25</sup> NASA Ames Research Center, Moffett Field, CA 94035, USA

<sup>26</sup> MTA CSFK Konkoly Observatory, Konkoly Thege M. ut 15-17H1121 Budapest, Hungary

A&A 611, A33 (2018), <https://doi.org/10.1051/0004-6361/201732155>

**Key words.** comets: general – comets: individual: Churyumov-Gerasimenko – methods: observational – errata, addenda

After publication several small errors in the labelled positions of the features described in this paper were found. Correcting these errors results in changes to Table 1 and Figs. 4, 5, and 6. These changes are: the latitude and longitude, as shown in the table and figures, of features 16 and 17 are swapped; and

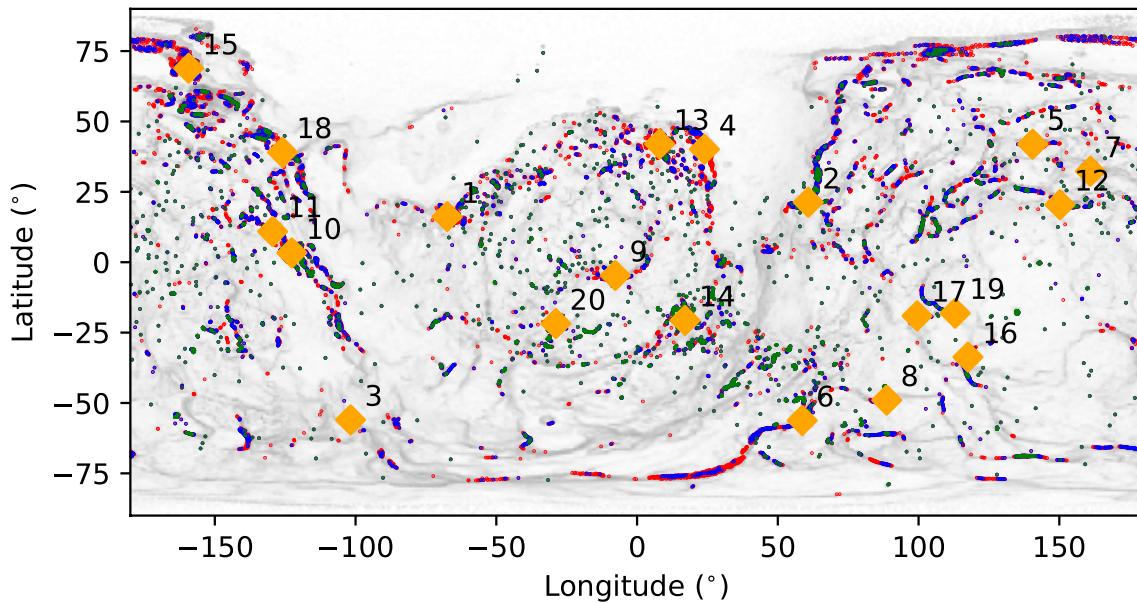
feature 19 was labelled in an incorrect location and has had its latitude, longitude and position in the figures updated. All other data remains the same.

*Acknowledgement.* We thank Andrew Cooper for spotting the above described errors.

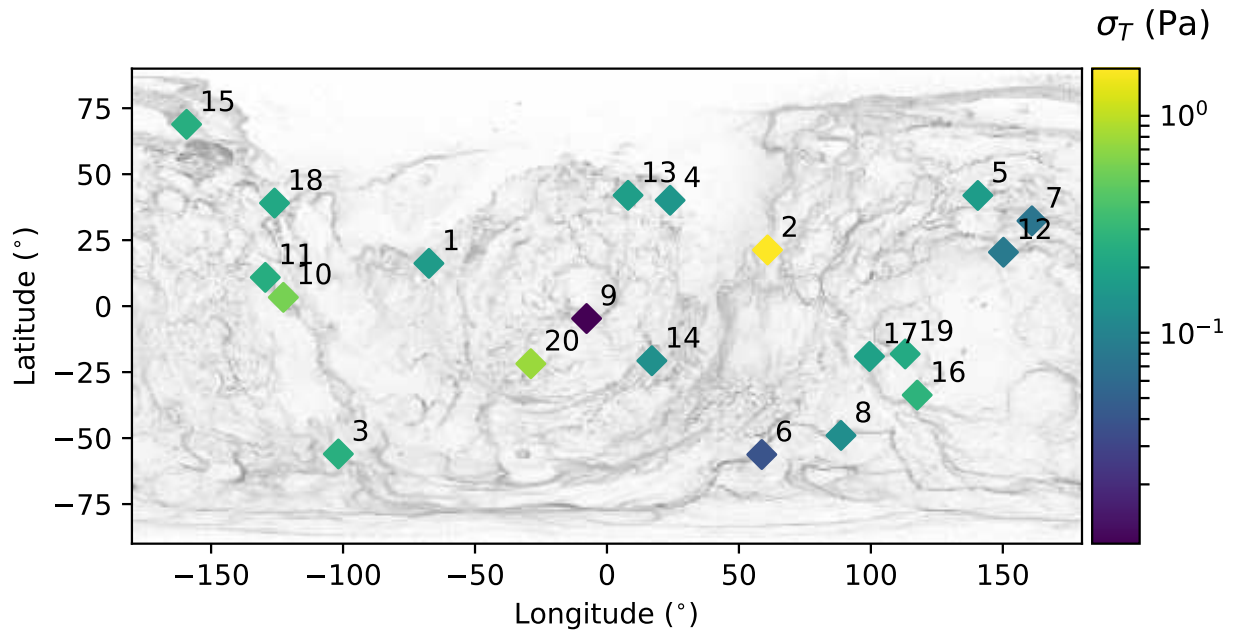
**Table 1.** Locations (in the Cheops frame) and properties of each measured overhang.

No.	Latitude (°)	Longitude (°)	$h$ (m)	$L$ (m)	$\sigma_T$ (Pa)
1	16.21	-67.47	109	13	0.17
2	21.29	60.84	113	38	1.65
3	-56.01	-101.77	100	15	0.26
4	40.12	23.93	109	11	0.15
5	41.94	140.53	67	11	0.17
6	-56.22	58.67	106	6	0.04
7	32.32	161.04	41	6	0.08
8	-49.00	88.69	32	5	0.13
9	-4.69	-7.72	33	2	0.01
10	3.33	-122.62	37	12	0.58
11	10.90	-129.46	61	11	0.25
12	20.43	150.23	95	8	0.08
13	41.99	7.99	32	7	0.18
14	-20.69	17.02	43	7	0.13
15	68.89	-159.29	65	11	0.25
16	-33.69	117.56	42	9	0.28
17	-19.06	99.47	47	9	0.19
18	39.06	-125.97	48	8	0.22
19	-18.12	113.00	56	10	0.23
20	-21.81	-28.84	9	6	0.77

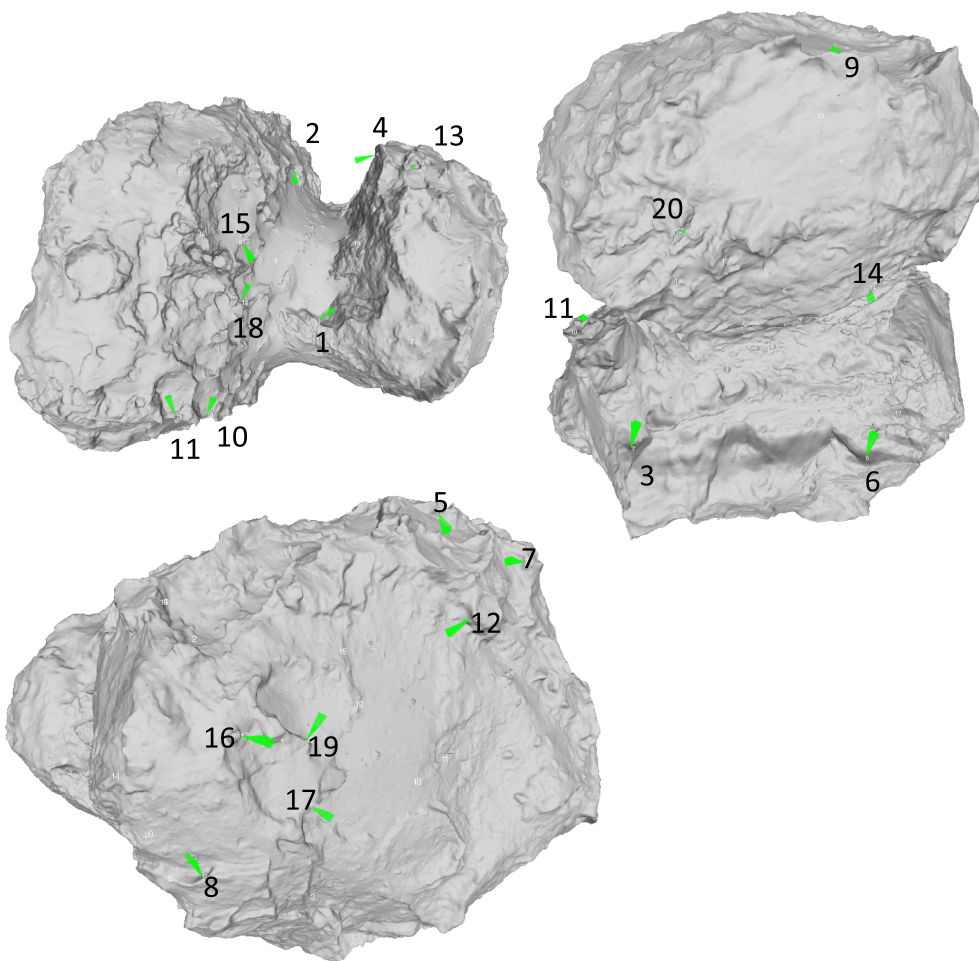
**Notes.**  $h$  and  $L$  are the heights and depths, as directly measured from the profiles, while  $\sigma_T$  is derived by numerically integrating the profile shape.



**Fig. 4.** Location of the measured overhangs (orange diamonds). Also shown are high-slope facets on the shape model with the colour scheme: green  $\geq 100^\circ$ , blue  $\geq 90^\circ$ , and red  $\geq 85^\circ$ .



**Fig. 5.** Location of the measured overhangs. The colour scheme shows the tensile strength (unscaled) on a log scale.



**Fig. 6.** Location of the measured overhangs on the shape model.