

$^{28}\text{Si}(^6\text{Li,d})$  1981Ta23,1974Li02,1969Go17

| Type            | Author   | History Citation | Literature Cutoff Date |
|-----------------|----------|------------------|------------------------|
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**1981Ta23:** E=75 MeV  $^6\text{Li}$  beam was produced from the SF cyclotron at the Institute for Nuclear Study, Tokyo. Target was 0.5 mg/cm<sup>2</sup> self-supporting natural Si. Reaction products were momentum-analyzed with a QDD spectrograph (FWHM=200 keV) and detected with a position sensitive proportional counter. Measured energy spectra,  $\sigma(\theta)$ . Deduced levels, spectroscopic factors from DWBA analysis. **1999Ma73** re-analyzed  $\sigma(\theta)$  data from **1981Ta23**.

**1974Li02:** E=32 MeV  $^6\text{Li}$  beam was produced from the Rochester MP tandem accelerator. Target was a gold-backed natural S in the form of CdS with a thickness of about 100  $\mu\text{g}/\text{cm}^2$ . Reaction products were momentum-analyzed with an Enge split-pole magnetic spectrograph (FWHM=60 keV) and detected with a wire proportional counter and a sonic spark counter. Measured  $\sigma(E_d)$ . Deduced levels.

**1969Go17:** E=25.8 MeV  $^6\text{Li}$  beam was produced from the Kurchatov Institute of Atomic Energy. Target was natural Si. Reaction products were momentum-analyzed with a multiparameter analysis system. Measured energy spectrum,  $\sigma(\theta)$ . Deduced levels.

Others:

**1991Ar23, 2006Br31:** measured  $d\alpha$ -coin; deduced  $\alpha$ -cluster structure.

 $^{32}\text{S}$  Levels

| E(level) <sup>†</sup> | S <sup>†</sup> | Comments   |
|-----------------------|----------------|--|
| 0                     | 1.0            | S: absolute spectroscopic factor is 1.4 ( <b>1981Ta23</b> ).                                 |
| 2240                  | 0.45           | E(level): other: 2200 ( <b>1969Go17</b> ), 2230 ( <b>1974Li02</b> ).                         |
| 3780                  | 0.53           | E(level): other: 3800 ( <b>1969Go17</b> ), 3780 ( <b>1974Li02</b> ).                         |
| 4280                  |                | E(level): from <b>1974Li02</b> .   |
| 4460                  | 0.20           | E(level): other: 4500 ( <b>1969Go17</b> ), 4460 ( <b>1974Li02</b> ).                         |
| 5010                  | 0.49           | E(level): other: 5000 ( <b>1969Go17</b> ), 5010 ( <b>1974Li02</b> ).                         |
| 5410 <sup>#</sup>     |                |  |
| 5800                  | 0.53           | E(level): other: 5800 ( <b>1969Go17,1974Li02</b> ).  |
| 6210 <sup>#</sup>     |                | E(level): other: 6220 ( <b>1974Li02</b> ).   |
| 6760                  |                | E(level): other: 6800 ( <b>1969Go17</b> ), 6760 ( <b>1974Li02</b> ).                         |
| 6850 <sup>@</sup>     |                |  |
| 7430                  | 1.2            | E(level): other: 7500 ( <b>1969Go17</b> ), 7430 ( <b>1974Li02</b> ).                         |
| 7700 <sup>#</sup>     |                |  |
| 8290 <sup>@</sup>     |                |  |
| 8490                  | 2.1            | E(level): other: 8500 ( <b>1969Go17,1974Li02</b> ).<br>S: Poor DWBA fit ( <b>1981Ta23</b> ). |
| 9060 <sup>@</sup>     |                |  |
| 9240 <sup>@</sup>     |                |  |
| 9300                  |                | E(level): from <b>1969Go17</b> ; not reported in <b>1981Ta23</b> and <b>1974Li02</b> .       |
| 9500                  |                | E(level): also seen in <b>1974Li02</b> .   |
| 10400 <sup>‡</sup>    |                | E(level): other: 10400 ( <b>1969Go17</b> ).  |
| 10800 <sup>‡</sup>    |                | E(level): other: 10800 ( <b>1969Go17</b> ).  |
| 11800 <sup>‡</sup>    |                | E(level): other: 118000 ( <b>1969Go17</b> ).   |
| 14500 <sup>‡</sup>    |                |  |
| 15600 <sup>‡</sup>    |                |  |

<sup>†</sup> From **1981Ta23**, unless otherwise noted. Relative spectroscopic factors as listed are from DWBA analysis of measured  $\sigma(\theta)$ .

<sup>‡</sup> Unresolved structures (**1981Ta23**); also seen in **1969Go17**.

<sup>#</sup> Weakly excited in **1974Li02**.

<sup>@</sup> From **1974Li02**.