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## CALCULATED ATOMIC SCATTERING FACTORS FOR SILICON AT 25° C.

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Despite the central position of silicon in the inorganic world and its singular importance in inorganic crystallography, no accurate atomic scattering factors at room temperature have been published for this element. Our recent studies of the crystallography of silicon have necessitated the calculation of these  $f$  values at 25° C. as a function of  $\sin \theta/\lambda$ ; we feel that this information will be a convenient reference for crystallographers.

Bragg and West (1928) have published semi-empirical scattering factors for silicon at room temperature as a function of  $\sin \theta/\lambda$ ; their  $f$  value for  $\sin \theta/\lambda=0.2$  is actually greater than the corresponding  $f_0$  value calculated by Hartree's method (1928). Using Hartree's method, James and Brindley (1931) have compiled accurate  $f_0$  values for silicon.

Recently, Pearlman and Keesom (1952) have determined the characteristic temperature of silicon, 658° K, thus allowing calculation of the temperature factor and atomic scattering factors for temperatures above 0° K. Therefore, the formula  $f=f_0 \exp(-B \sin^2 \theta/\lambda^2)$  given in the Inter-

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$\sin \theta/\lambda$	0.0	0.1	0.2	0.3	0.4	0.5
$f_0$ Hartree	14.0	11.35	9.4	8.2	7.15	6.1
$f_{298}$ calculated	14.0	11.3	9.3	8.0	6.8	5.6
$f_T$ Bragg & West	14.0	11.2	9.6	8.0	6.6	5.5
$\sin \theta/\lambda$	0.6	0.7	0.8	0.9	1.0	1.1
$f_0$ Hartree	5.1	4.2	3.4	2.95	2.6	2.3
$f_{298}$ calculated	4.55	3.6	2.8	2.3	1.9	1.6
$f_T$ Bragg & West	4.4	3.6	2.9	2.4	1.9	1.6

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nationale Tabellen was applied, where the exponent  $B$  was calculated for  $\Theta = 658^\circ \text{ K}$  and  $T = 298.16^\circ \text{ K}$ . For silicon at  $25^\circ \text{ C}$ .,  $B = 0.318 \times 10^{-16}$ .

The following table lists the Hartree  $f_0$  values used, the  $f_{298}$  values calculated, and the  $f_T$  values of Bragg and West as functions of  $\sin \theta/\lambda$ , where  $\lambda$  is in  $\text{\AA}$ .

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The Academy of Science of the U.S.S.R. has recently begun the publication of a new journal entitled *Kristallografiya*. The journal will publish papers on theoretical crystallography, crystal structure analyses, chemical crystallography, physical crystallography, physical chemical crystallography, crystal genesis, applied crystallography and history of crystallography. Six issues of the journal will appear each year. The articles are all in Russian.

Effective July 2, 1956, Dr. George S. Switzer was appointed Acting Curator of the Division of Mineralogy and Petrology, Department of Geology, in the U. S. National Museum. Dr. Switzer succeeds the late Dr. W. F. Foshag, who was in charge of the Division since 1929. Dr. Switzer has been a member of the Museum staff for nine years.

The tenth annual midwestern meeting of Exploration Geophysicists has been scheduled for March 13, 14, and 15, 1957, at Hotel Texas in Fort Worth. The meetings are held on alternate years in Dallas and Fort Worth.

It is with deep regret that we record the death on Sept. 11, 1956, of Norman L. Bowen at Washington, D. C., at the age of 69 years. Dr. Bowen was the recipient of many honors including the Roebling Medal in 1950. In 1937 he was elected President of the Mineralogical Society of America. A memorial will appear in a later issue of this Journal.

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## Erratum

A few word changes seem necessary to clarify the author's original meaning in article by A. C. Tobi in volume 41, page 516. The last paragraph of the "Introduction" should read as follows:

"Especially in cases where several sets of lenses are used in routine work for the measurements of optic angles, *this* chart gives a practical solution. Further details are given *in the article cited below.*"