The image was also tested on several other dates, though no measures were made. The star was also observed for color:

1904 May 4. "There is no color to the star."

1906 Aug. 28. "It is almost colorless, but the seeing is too bad to be certain." Later: "So far as I can judge, the star is white."

1906 Sept. 11. "It may be tinged with yellow, but not certain. It is not *white*."

For the brightness of the *Nova* the following observations were made:

1906 Aug. 28. Independent estimate $= 9^m3$.
Aug. 28. $\frac{2}{10}^m$ less than $+26°2761$
Sept. 11. $\frac{3}{10}^m$ less than $+26.2761$

In the *B.D.* these two stars are:

$+26°2761$	9^m1
$+26.2765$	9.5 (T)

It would seem, therefore, that the *Nova* is now essentially of the same brightness it was before the outburst in 1866.

These two stars are Cambridge *A.G.C.*, 7412 and 7433, and their places, brought up to 1906.0, are:

	$15^h\ 54^m\ 32^s39$	$+26°\ 12'\ 38''8$
T	15 55 34.32	+26 11 10.2
	$\Delta\alpha + 1^m\ 1^s93$	$\Delta\delta - 1'\ 28''6$

On 1906 August 28, I compared these two stars for position of the *Nova:*

$\Delta\alpha = +1^m\ 1^s85$ (8 transits)
$\Delta\delta = -1'\ 27''1$ (2 measures)

It will be seen that my measures make the $\Delta\delta$ $1''5$ smaller than the value given by the Cambridge observations. If, however, this error is divided between the two stars in the Cambridge observations, the discordance would not be greater than would be expected from good meridian positions. So there seems to be no indication of motion in the *Nova.*

A NEBULA NEAR THE *NOVA*

While examining the star, I found a faint nebula in the field with it, following. The nebula is of the 14th or 15th magnitude, and is from $5''$ to $10''$ in diameter, without any nucleus.

The following measures of this nebula and the *Nova* were made:

		$\Delta\alpha$		$\Delta\delta$
1903	April 27	$+4'\ 50''.9$ (1)	$=+0^m\ 21^s.62$	$+1'\ 13''.1$ (1)
	April 28	$+4\ 50.5$ (1)	$=+0\ 21.60$	$+1\ 13.4$ (1)
1906	Sept. 11	$+4\ 49.1$ (2)	$=+0\ 21.48$	$+1\ 11.1$ (2)

The discordances in these results are purely accidental, from the faintness and indefiniteness of the nebula.

From these observations, and the Cambridge position of the *Nova*, the place of the nebula is:

$$1906.0 \quad \alpha = 15^h\ 55^m\ 55^s.85\,; \qquad \delta = +26^\circ\ 12'\ 21''.9\,.$$

E. E. BARNARD

YERKES OBSERVATORY
April, 1907

REGULAR AND DIFFUSE REFLECTION

In the *Astrophysical Journal*, **24**, 351, 1906, the writer is quoted as having found that "various common minerals which reflect only *diffusively* in the region of the spectrum of shorter wave-lengths than 8 μ have bands of metallic reflection from 8.5 to 10 μ." Since then the original paper is being interpreted from the standpoint of "diffuse" and "metallic" reflection. The whole is based upon a misconception and misquotation of the original statement,[1] viz.: "The writer found the reflecting power [of various silicates] to be practically zero for the region of the spectrum up to 8 μ, followed by bands of metallic reflection from 8.5 to 10 μ."

Since the surfaces examined were in nearly all cases plane and highly polished, there was no "diffuse" reflection, which is an entirely different question from low, "practically zero," reflection; and it would indeed be very unfortunate to have such an idea (that diffuse and low reflection are synonymous) gain foothold. It is with the hope that such hazy notions may be cleared up that the present comments are written.

When energy is reflected from a plane surface, it is commonly called "regular" (or, less accurately, "specular") reflection. On the other hand, energy reflected from a rough surface suffers "diffuse" reflection. In "diffuse reflection" for each infinitesimal surface the

[1] *Phys. Rev.*, 23 247, 1906.