Note on the Sothic period

It is not sufficient for such calculations as Petrie makes on p 251 to regard the seasons as shifting by just $\frac{1}{4}$ day every Egyptian year.

The tropical year was in those times 365 days 5 hours 49 minutes or $365\frac{5.82}{24}$ days. Now 365 days is 8760 hours and $\frac{8760}{5.82} = 1509$

Hence 1509 Egyptian years equal 1508 tropical years, and since $\frac{1509}{365} = 4.13$, it follows that the season came one day later every 4.13 years. It would therefore come 66 days later in 4.13 x 66 = 273 years

making a difference of 3 years in Petrie's calculation.

However, the question of the rising of Sirius is not so simple as it appears at first sight to be.