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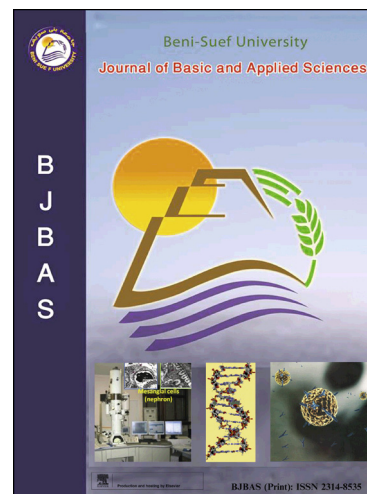
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Pseudo Dawn and True Dawn Observations by Naked Eye in Egypt

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Abstract:

Naked eye observations of the morning twilight phenomenon, beginning, end of a pseudo dawn and the true dawn are recorded. These results are an average of 38 observations carried out at Wadi Al Natron (30° 30' N, 30° 09' E) with a desert background during the years 2014-2015. These observations enabled us to get an average depression of the sun below the horizon of about 19.74° (begin of zodiacal light), 15.41° (end of zodiacal light) and the beginning of twilight (true dawn) is 14.57° (The highest value of confidence, mean+ 1SD) which lies in a range between (12.48° ≤ D_o ≤ 15.14°). These results show that there is about 5° difference between our obtained value and that currently used in Egypt which is 19.5°. The azimuthally range of observations in the solar vertical direction ranged from 0° to 20°, but this phenomenon was followed from 0° to 10° along the altitudinal range. These results indicate that the currently used angle for calculating morning twilight in Egypt now is the first zodiacal light (pseudo dawn) and not true dawn.

Key words: Pseudo Dawn, True Dawn, Naked eye observations.

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