

# Nightmares and Starscapes: Nightmare Frequency and Night-Sky Watching

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**Objective:** To investigate the relationship between nightmares and a common, nonpathological behavior, this study tested the relationship between nightmares and night-sky watching.

**Method:** University students (N= 79) completed measures of night-sky watching frequency, nightmare frequency, and the Noctcaelador Inventory, a measure of psychological attachment to the night-sky. Data was analyzed using standard correlational procedures

**Results:** Nightmares were significantly positively related to night-sky watching frequency, but not noctcaelador.

**Conclusions:** The results suggest a possible shared psychic structure for night-sky watchers and nightmare experiencers. Future research is indicated to examine this structure further and to more rigorously test the mood management hypothesis of night-sky watching.

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**Key words:** Nightmares, coping, sleep, night-sky watching, astronomy

## INTRODUCTION

Nightmares have been defined as “very disturbing dreams involving any unpleasant emotion” (1). Although often considered a childhood condition, a substantial percentage of participants in non-clinical adult samples have reported nightmares. For example, the number of non-clinical, adult participants who have reported experiencing nightmares at least once a month ranged from 8.3% (2) to 52.2% (3).

Nightmares have also been demonstrated to elicit distress and affect individuals’ lives during waking hours (1,4).

Although normal dreaming can occur at any stage of sleep, nightmares seem primarily restricted to REM sleep, which increases near the end of the sleep cycle (5). There is disagreement among researchers as to why nightmares occur. One promising proposition has spawned from the continuity model of dreams (6). This model suggests that individuals experience dreams that, to some extent, reflect their waking experiences. Hence, those prone to bizarre mentation and susceptibility to stress or negative moods during waking periods are also prone to have these experiences during dreams. Empirical research has largely supported this hypothesis. For example, nightmare

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frequency has been related to neuroticism (7), Type-A personality (8), post-traumatic stress (9), and scores higher than controls on the hypochondriasis, depression, hysteria, paranoia, schizophrenia, and hypomania scales of the MMPI (10). Other researchers (3,11) also found that state stress and state anxiety better accounted for the experience of nightmares than trait personality measures.

One possible explanation of individual differences in continuity of experiences, at least mood and unusual thought experiences, between waking states and nightmares might be that individuals with frequent nightmares also tend to have thinner psychological boundaries; boundaries refer to a cognitive style in which more permeable boundaries result in heightened sensitivity to external stimuli, and information and moods more readily cross internally from unawareness to conscious awareness (2-4). Consistent with a more permeable mental structure, those who experience nightmares frequently are also more likely to report psychological absorption (employment of fantasy and becoming engrossed in a particular stimulus) and hypnotism susceptibility (2).

Nightmares, by definition, are unpleasant. They also predict unpleasant outcomes. In a recent study by Cukrowicz et al. (12), nightmares were predictive of depression and suicidality. It seems reasonable that many individuals would attempt to find ways to cope with the distress of frequent nightmares, i.e., seeking professional help or through other mechanisms (13). One possible coping strategy might be to become absorbed in a pleasant pastime (14). For a substantial number of individuals, night-sky watching may be considered just such an experience.

In one student sample, 62.5% of respondents endorsed viewing the night-sky at least once a week (15). Difficulty arises, however, when attempting to decipher why

such a substantial percentage of individuals intentionally view the night-sky on a regular basis. Historical evidence suggests that purposes for night-sky watching have included aesthetic appreciation (16), cultural and spiritual inspiration (17), and attempts to attain insight or knowledge (18). Although these findings do enrich our knowledge of possible motivations for night-sky watching, due to their historical nature they cannot provide us with direct knowledge of contemporary individuals' experiences.

Only recently have psychological studies begun to be conducted on this apparently common component of the human experience. The findings of these studies suggest that night-sky watching could be conceptualized as an activity that reinforces its participants through reduction of negative mood, i.e., coping (19), or enhancement of positive mood (20). For purposes of discussion in this article, this will be dubbed the "mood management hypothesis." From this perspective, night-sky watching, through an as yet unidentified mechanism, assists individuals in regulating mood, thus reinforcing night-sky watching behavior by reducing undesired mood and/or increasing positive mood.

One possible mechanism which might promote mood management in night-sky watching could be an individual difference which has also been discussed as influencing the experience of nightmares - permeable boundaries in the mind. It is conceivable that permeable mental boundaries allow night-sky watchers to enjoy the cognitive complexity of the night-sky while simultaneously playing upon more fanciful, enjoyable primary processes (21). Additional support for this line of thought comes from associations between intrapsychic boundaries and psychological absorption (22). Kelly, Daughtry, and Kelly (23) found that interest in night-sky watching was strongly related to absorption ( $r = .64$ ). They suggested that the pleasant experience of

psychological absorption in the night-sky might serve to reinforce the night-sky as an attachment object; thus, individuals would be more prone to watch the night-sky again in the future.

The purpose of the current study was to examine the relationship between night-sky watching and nightmare frequency in a college student sample, as both of these occurrences are not uncommon among students. Based on previous findings that nightmares and night-sky watching share relationships with traits such as absorption (2,23) and unusual thought processes (24,25), it was predicted that night-sky watching would significantly, positively relate to nightmare frequency.

## METHOD

### Participants and Procedure

After obtaining informed consent, 79 students (59 females) enrolled in upper and lower-level university psychology courses completed the self-report scales described below. The average age of the sample was 25.0 years ( $SD=6.9$ ). There was no difference between the sexes for age,  $t(75)=.21$ ,  $p=.83$ . The average self-reported habitual sleep-length for the sample was 6.9 hours per night ( $SD=1.5$ ).

#### Measures

Night-Sky Watching Frequency (NSWF). NSWF was measured using the single self-report item used by Kelly (26). Participants were asked to estimate “closest to the number of nights in the past 6 months which you have made it a point to intentionally look at the night-sky.” Possible responses were 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 30, 40, 50, more than 50. The intention was to obtain an estimate of night-sky watching frequency not an exact count. Hence, the large gaps between higher responses were considered acceptable.

Nightmare Frequency (NF). NF was also

assessed with a single self-report item. Participants were asked to estimate the number of nightmares they recalled over the past 6 months. Kelly’s (26) response format (see above) for NSWF was used to maintain consistency between the NSWF and NF measures in this study. Again, as the intent was to obtain an estimate, gaps between larger estimates was considered acceptable.

Noctcaelador Inventory (NI). The 10-item NI (26) was used to assess psychological attachment to the night-sky. The measure seems to tap both interest and pleasure in watching the night-sky, as well as a fondness for the night-sky (i.e., “I feel an emotional attachment to the night-sky”). Participants responded using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Higher summed scores indicated more attachment to the night-sky. Reliability and validity have been demonstrated (26). The coefficient alpha in the current sample was .93.

### Data Analysis

All data was examined as continuous measures. Standard procedures were used for calculating means and standard deviations. Zero-order correlations were used to examine relationships between variables. Analyses were calculated using SPSS version 17.0 for Windows.

## RESULTS

Means and standard deviations of measures in this study were as follows: NSWF - 14.7, 15.4; NF - 6.8, 11.9; NI - 28.6, 8.3, respectively. An alpha level of .05 (two-tailed) was set for all significance tests. NSWF was significantly correlated with NF,  $r=.30$ ,  $p<.01$ , and NI scores,  $r=.36$ ,  $p<.01$ . Although nightmare frequency significantly related to night-sky watching, it was not correlated significantly with NI scores,  $r=.14$ , ns.

## DISCUSSION

The results of this study supported the hypothesis. Night-sky watching was significantly related to frequency of nightmares. The results are consistent with previous research which found common relationships between NSWF and NF and absorption and magical ideation (2,23-25). Further, these findings support the conceptualization of both night-sky watching and nightmares as being at least partly influenced by a similar psychological structure.

Consistent with the mood management hypothesis of night-sky watching, it may be that individuals who experience frequent nightmares on some mental level, even unwittingly, attempt to alter their moods by watching the night-sky. The exact nature of the mood management mechanism remains unclear. As suggested earlier, it may be that becoming absorbed in a perceived peaceful stimulus, the night-sky, brings comfort or stress relief (20). It is also plausible, however, that watching the night-sky allows individuals to become involved with a complex, aesthetically pleasing stimulus in which thousands of lights comprising countless patterns and curious elements draws individuals' attention and perhaps allows their fantasies to "run free" (21), thus providing a reinforcing stimulus.

One surprising finding was the lack of a significant relationship between nightmares and NI scores. Observations have indicated that night-sky watching, watching the night-

sky to cope, and fondness for the night-sky exist under the umbrella of one factor (19,20,26). In that case, both the NI and night-sky watching frequency should have demonstrated significant correlations with nightmares. These findings may prompt researchers to further consider the possibility that night-sky watching as a behavior and attachment or fondness for the night-sky are not one and the same. Previous research has produced similar findings. In one study, attachment to the night-sky was separate but related to interest in astronomy as a profession (27). Another explanation may be that one does not have to be attached to the night-sky to benefit from its mood regulating benefits. Future research is needed to examine both of these possibilities.

Despite the relatively robust, significant findings observed in this study, there are limitations which should be considered. The typical limitations of a small, homogeneous sample of college students are primary limitations. Also, the measures used for night-sky watching and nightmare frequency were single-item assessments. Such measures remain controversial in terms of reliability and validity. Future studies would benefit from additional sources of data rather than such simple self-report scales. Additional work is also needed to investigate the underlying psychological structure for both night-sky watching and nightmares. Moreover, the mood management hypothesis needs to be more rigorously tested, preferably using experimental rather than correlational methodology.

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