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# ASTRONOMICAL STATION VIDOJEVICA: OBSERVATIONS FROM 2011 TO 2023

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**Abstract.** We present the statistic of observing time used at the Astronomical Station Vidojevica (ASV) from its opening in 2011 to the current year. We analyze separately the first period, 2011-2018, when only the Nedeljković telescope (0.60 m) was available and the second period, 2018-2023, when also observations with the Milanković telescope (1.40 m) were performed. The year 2018 marks the beginning of public calls for observing time at the ASV and the reviewing of the received observational proposals by the Time Allocation Committee (TAC). Finally, we briefly analyze the scientific output produced using the telescopes mounted at the ASV, i.e., the number of printed papers in scientific journals in the 2011-2023 period.

## 1. INTRODUCTION

The observational activities at the Astronomical Station Vidojevica (ASV) run by the Astronomical Observatory of Belgrade started with the mounting of the 0.60 m telescope Nedeljković in 2011. The next major event was mounting of the 1.40 m telescope Milanković in June 2016. The tests made then confirmed that the observing conditions at the ASV were excellent with the measured seeing of 0.7 arc seconds, comparable to the best observing sites in the world. In September 2018 the telescope was transferred to a newly-built pavilion with a professional rotating dome. The details about the telescope Milanković and its beginnings are given in the Proceedings of the 18th Serbian Astronomical Conference (Samurović (2018), Vince et al. (2018) and Samurović et al. (2018)).

## 2. OBSERVATIONS FROM 2011 TO 2023

All three authors of this contribution were members of the first Time Allocation Committee (TAC), formed in 2017. In December 2017 the Rulebook was published and immediately afterwards the first call for observing time on both telescopes was launched for the observational semester July-December 2018. In December 2022 the second TAC was formed and one of us (S. Samurović) remained in it. For the purpose of this contribution we analyzed all received observational proposals in period 2018-2023 and the decisions of the TAC and present our findings below. From the mounting of both telescopes at the ASV the observations were performed in a test mode and each potential observer in agreement with the Director of the AOB and the staff of the ASV could obtain observing time for his/her observing team and their observing project(s). Since 2018 all observing proposals were subject of a peer review performed

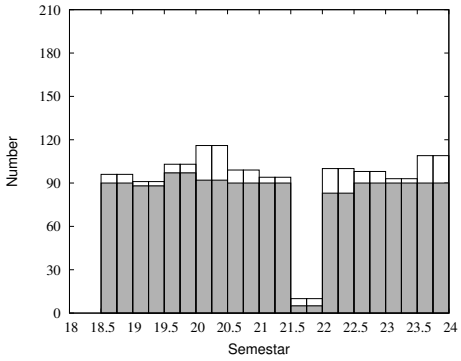


Figure 1: Observing time on the 0.60 m telescope. Empty bars indicate number of requested observing nights and the grey bars show the allocated number of observing nights by the TAC.

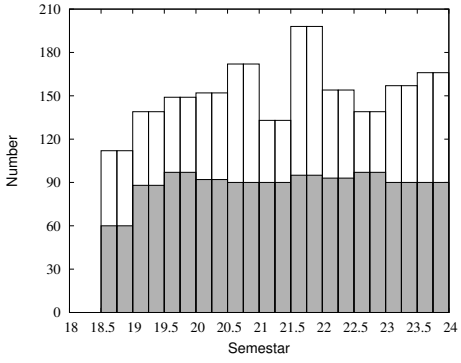


Figure 2: Observing time on the 1.40 m telescope. The meaning of the bars is the same as in Figure 1 above.

by the TAC. In some cases, when Principal Investigator could provide evidence that additional observations were necessary, the Director and/or TAC secured additional observing nights for a given observing project.

In this contribution we do not discuss the number of nights of actual observations, i.e., the number of nights spent on observations vs. the number of nights when poor weather conditions prevented observations to be performed. This will be the subject of a future paper.

## 3. ALLOCATION OF THE TELESCOPE TIME

Two tables and figures show the requested and allocated observing nights for both telescopes at the ASV from the second semester of 2018 to the second semester of 2023 (for which the observations are still ongoing at the time of this writing).

Allocated Director's and TAC's Guaranteed Times are included in both tables in the third column. The label "Pressure" in the fourth column in both tables denotes the number of nights requested divided by the number of allocated nights. The histograms containing information from Tables 1 and 2 are plotted in Figures 1 and

Table 1: Observing time on the 0.60 m telescope.

| Observational Semester | Number of observing nights requested | Number of observing nights allocated | Pressure |
|---|---|---|---|
| July - December 2018 | 96 | 90 | 1.07 |
| January - June 2019 | 91 | 88 | 1.03 |
| July - December 2019 | 103 | 97 | 1.06 |
| January - June 2020 | 116 | 92 | 1.26 |
| July - December 2020 | 99 | 90 | 1.10 |
| January - June 2021 | 94 | 90 | 1.04 |
| July - December 2021 | 10 | 5 | 2.00 |
| January - June 2022 | 100 | 83 | 1.20 |
| July - December 2022 | 98 | 90 | 1.09 |
| January - June 2023 | 93 | 90 | 1.03 |
| July - December 2023 | 109 | 90 | 1.21 |

2. The pressure for the 2011-2018 period is equal to one. The low number of requested and allocated nights in July-December 2021 semester is due to the fact that 0.60 m telescope was under maintenance in that period and this semester will be omitted from our analysis below. Also, the lower number of allocated nights in the July-December 2018 semester for the 1.40 m telescope was due to the transfer of the Milanković telescope to the new pavilion, as noted above and thus this semester will also be excluded from our analysis below.

## 4. ANALYSIS

When we exclude one period per telescope, as described above, we find that the average pressure for the 0.60 cm Nedeljković is 1.11 and for the 1.40 m Milanković telescope we find a much higher value of 1.69. Since the highest pressure for the Milanković telescope was in the period July-December 2021 when the Nedeljković telescope was under maintenance and if we exclude the value of 2.08 obtained for Milanković in that period, we calculate the pressure of 1.65. Therefore, we can conclude that there is much higher demand for observation time at the Milanković telescope.

For both telescopes, using NASA ADS service we counted total of 63 papers in the period 2011-2023 published in the leading astronomical journals (M20 category as defined by the Ministry of Science, Technological Development and Inovation of the Republic of Serbia).

## 5. CONCLUSIONS

We presented the statistic of observing time used at the Astronomical Station Vidojevica (ASV) from its opening in 2011 to the current year for Milanković (1.40 m) and Nedeljković (0.60 m) telescopes. We have only addressed the number of requested and allocated nights per each semester.

Table 2: Observing time on the 1.40 m telescope.

| Observational Semester | Number of observing nights requested | Number of observing nights allocated | Pressure |
|---|---|---|---|
| July - December 2018 | 112 | 60 | 1.87 |
| January - June 2019 | 139 | 88 | 1.58 |
| July - December 2019 | 149 | 97 | 1.54 |
| January - June 2020 | 152 | 92 | 1.65 |
| July - December 2020 | 172 | 90 | 1.91 |
| January - June 2021 | 133 | 90 | 1.48 |
| July - December 2021 | 198 | 95 | 2.08 |
| January - June 2022 | 154 | 93 | 1.66 |
| July - December 2022 | 139 | 97 | 1.43 |
| January - June 2023 | 157 | 90 | 1.74 |
| July - December 2023 | 166 | 90 | 1.84 |

We show that there is a much higher demand for observational time at Milanković 1.40 m telescope: the ratio of calculated pressures is $P_M/P_N \sim 1.6/1.1$, where in the indices $M$ denotes Milanković and $N$ denotes Nedeljković.

Using the NASA ADS service we found more than 60 refereed papers printed in leading astronomical journals in the period 2011-2023 based on the observations made with both telescopes mounted at the Vidojevica Astronomical Station.

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