



2024



Dragi naši korisnici, partneri i kolege,

nakon postignuća u 2023. godini, podigli smo ljestvicu budućih očekivanja. Završetkom strukturnih projekata METMONIC, VEPAR i AIRQ, kojima su modernizirane meteorološka, hidrološka i mreža za praćenje kvalitete zraka, osigurali smo podatke iz cijele Hrvatske u realnom vremenu, te u prostornoj i vremenskoj gustoći kao nikada do sada. Ova tehnologija olakšava i unaprjeđuje naš rad, ali nas istovremeno obvezuje da još učinkovitije izvršavamo naše najvažnije zadaće. To su prije svega zaštita života i sigurnosti građana kroz daljnje unaprjeđenje sustava upravljanja rizicima od prirodnih i ekoloških nesreća i katastrofa, očuvanje prirodnih bogatstava, osiguranje podrške održivom i gospodarskom razvoju te prilagodbi Hrvatske klimatskim promjenama.

Unatoč napretku tehnologije i modernizaciji, uloga naših motritelja ostaje važna. Njihova stručnost, pažnja i briga za integritet podataka i sustava uvijek će ih činiti ključnim čimbenicima u osiguravanju kvalitete podataka osnovne sirovine za naš rad, posebno u izoliranim i teško dostupnim dijelovima Hrvatske. I prijašnje modernizacije mijenjale su motriteljsku ulogu, prilagođavajući je tehnološkim dostignućima. Koliko god je napredak donosio sa sobom automatizaciju mnogih procesa, ljudska prisutnost ostala je neophodna. Rad motritelja će biti od velike važnosti u prijelaznom razdoblju s klasičnih na automatske sustave, a nakon toga u nadzoru mjernih sustava i kontroli podataka. Zato kalendar za 2024. godinu posvećujemo našim motriteljima i njihovoj ključnoj ulozi u osiguranju dosljednosti i kvalitete podataka, kao i pravilnog funkcioniranja sustava.

Inspiraciju za buduće poduhvate često nalazimo u prošlosti. Ovaj put je to život i djelo Ivana Stožira, prvog gričkog motritelja, rođenog prije 190 godina, koji je s predanošću i strašcu obavljao posao motritelja punih 30 godina. Sve je započelo 1861. u kabinetu fizike na Velikoj realki na Griču 3, u Zagrebu kada je profesoru Stožiru povjerenovo vođenje meteoroloških mjerjenja. Posvećeno je usavršavao mjerjenja i opremu, prilagođavajući se zahtjevima vremena i tehnologije. Brinuo se o instrumentima, pažljivo obrađivao podatke, vodio administraciju i publicirao podatke motrenja. Kada je Ivan Stožir umirovljen, postaja na Griču nosila je status Opservatorija, bila je čuvena i priznata izvan granica zemlje. Stožirovo mjesto upravitelja Opservatorija preuzima Andrija Mohorovičić, čija je značajna uloga u povijesti, sasvim sigurno, i posljedica činjenice da je mogao nastaviti raditi na *ramenima velikana* kao što je bio Stožir. Ova priča o Ivanu Stožiru podsjeća nas na važnost predanosti, želje za inovacijom i napretkom koje će neminovalno dovesti do izvanrednih postignuća.

Ono što radimo danas oblikuje svijet koji će nove generacije naslijediti sutra. Izgradnja budućnosti temelji se na stalnom praćenju promjena i prilagodbi, ali u istoj mjeri i na važnosti svakog pojedinca koji svojim doprinosom čini razliku u oblikovanju svijeta sutrašnjice.



dr. sc. Branka Ivančan-Picek
glavna ravnateljica DHMZ-a

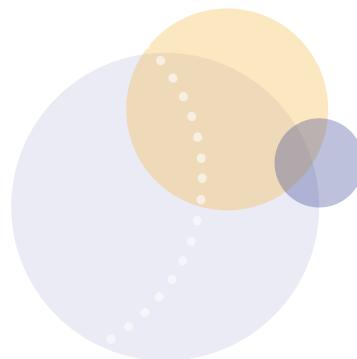
Dear customers, partners and colleagues,

Our accomplishments in 2023 raised the bar for future expectations. By completing the METMONIC, VEPAR and AIRQ structural projects, which modernised our meteorological and hydrological networks as well as our air quality monitoring network, we secured access to data from across Croatia in real time and in an unprecedented spatial and temporal density. While facilitating and advancing our work, this technology also compels us to perform our most important tasks even more efficiently. These include, first and foremost, protecting the citizens' lives and safety through continued improvement of our risk management systems for natural and environmental accident and disaster risks, conserving our natural resources, and supporting Croatia's sustainable economic development and climate change adaptation.

In spite of technological advancements and modernisation, our observers continue to play an important role. With their expertise and diligence, along with the efforts they invest in ensuring the integrity of our data and systems, they will always remain a key factor in ensuring the quality of the basic inputs we use in our work, especially in isolated and remote parts of Croatia. Through past modernisations, the role of our observers evolved and adapted to technological developments. Even with the technological progress that resulted in the automation of a number of processes, human presence remains essential. The work of our observers will be of vital importance during the transition from classical to automated systems, and afterwards in measurement system monitoring and data control. We have therefore dedicated our 2024 calendar to our observers and to their key role in ensuring data consistency and quality, and the proper functioning of our system.

Inspiration for future journeys is often drawn from the past. This time, we have derived our inspiration from the life and work of Ivan Stožir, the first observer at Grič, born 190 years ago, who worked as an observer with great dedication and passion for 30 years. It had all started in 1861 at the physics laboratory of the Oberrealschule at Grič 3 in Zagreb, when professor Stožir was entrusted with managing the meteorological measurements. He improved the measurements and the equipment with great commitment, adapting to the requirements of the time and technology. Professor Stožir maintained the instruments, processed the data with care, handled the administrative tasks, and published the observation data. When he retired, the Grič station had observatory status, and was internationally renowned and acknowledged. Andrija Mohorovičić, whose important historical role partly resulted from the opportunity to continue the work of outstanding scientists like Stožir, replaced him as the head of the observatory. Ivan Stožir's story reminds us about the importance of dedication and the impulse for innovation and progress, which inevitably results in remarkable accomplishments.

Our actions today shape the world that the coming generations will inherit tomorrow. In building our future, we rely on continual monitoring of changes and adaptations, but equally on the important role of every individual, whose contribution makes a difference in shaping the world of tomorrow.



Branka Ivančan-Picek, PhD
Director-General, DHMZ



Gradacija vidljivosti / Grades of visibility, Sinj, ©Šimun Pavić

2024.

SIJEČANJ JANUARY



Motrenje je standardizirani postupak dobivanja više meteoroloških podataka mjeranjem i opažanjem, ovisno o meteorološkom elementu i raspoloživim instrumentima. Motrenja se obavljaju obično u standardnim terminima.

Observation is the standardised procedure for collecting more meteorological information through measurement and visual observation, depending on the meteorological element and the available instruments. Observation is usually performed at standard times.

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4





U zagrljaju oluje / Looming storm, Zagreb, ©Bruno Fantulin

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VELJAČA FEBRUARY



Meteorološko mjerjenje je postupak dobivanja meteorološkog podatka mjernim instrumentom (npr. termometrom, barometrom...).

Meteorological measurement is the process of collecting meteorological data using a measurement instrument (such as a thermometer, barometer...).

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	1	2	3
4	5	6	7	8	9	10





Glasna tišina / Silence so loud, Gajac, otog Pag, ©Zrinka Balabanić

2024.

OŽUJAK MARCH



Meteorološko opažanje je dobivanje meteoroloških podataka gledanjem, pri čemu motritelj utvrđuje opisnu značajku nekog meteorološkog elementa te ju izražava tekstom ili dogovorenom šifrom.

Visual **meteorological observation** is the collection of meteorological data by watching. The observer identifies a descriptive characteristic of a meteorological element and logs it using text or an agreed code.

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
26	27	28	29	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7





Igračka vjetrova / Playthings for the winds, Gračac, ©Goran Dorić

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TRAVANJ APRIL



Meteorološka postaja je posebno odabрано i opremljeno mjesto na kojem se sustavno izvode meteorološka motrenja, prema standardima Svjetske meteorološke organizacije. Postoje različite vrste postaja ovisno o opremljenosti, osposobljenosti i broju motritelja, namjeni i sl.

A meteorological station is a specially chosen and equipped place where weather observations are performed systematically in accordance with the standards put in place by the World Meteorological Organisation. Types of meteorological stations differ depending on their equipment, capacity and the number of observers, the purpose of the station etc.

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5





Ulaz u drugu dimenziju / A door into another dimension, Ivanec, ©Boris Jagetić Daraboš

2024.

SVIBANJ MAY



Meteorološki motritelji imaju važnu ulogu u praćenju vremenskih uvjeta na meteorološkoj postaji. Motritelji u redovnom radnom odnosu moraju biti profesionalci srednje stručne spreme, a dobrovoljni motritelji se osposobljavaju za taj posao kraćom podukom.

Meteorological observers have an important role in monitoring the weather at a meteorological station. Observers who are employed full-time have to be professionals with high school qualifications, while volunteer observers undergo a brief training course for the job.

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9





Moć prirode / A magnificent force of nature, Grabovac Mitrovac, ©Matej Seletković

2024.

LIPANJ JUNE



Meteorološki dnevnik je dokument u kojem se bilježe svakodnevna meteorološka mjerena i opažanja, a ispunjava ga motritelj tijekom motrenja. Iz dnevnika se sastavlja mjesечно meteorološko izvješće za postaju.

A meteorological daily is a document that is used to keep record of daily meteorological measurements and observations, completed by the observer during the observations. Data from the daily is used to compile the monthly meteorological report for a given station.

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7



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Oluja s pogledom / A storm with a view, Mali Lošinj, otok Lošinj, ©Sandro Puncet

2024.

SRPANJ JULY



Meteorološki opservatorij je meteorološka postaja koja opsegom i sadržajem rada prelazi operativne potrebe meteoroloških postaja; služi i za istraživanja.

A meteorological observatory is a meteorological station also used for research purposes, whose scope and content of activity extends beyond the operating needs of meteorological stations.

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
24	25	26	27	28	29	30
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22	23	24	25	26	27	28
29	30	31	1	2	3	4





Laku noć, Sunce / Good night, Sun, Stončica, otok Vis, ©Katarina Fruk

2024.

KOLOVOZ AUGUST



Lansiranje meteorološke radiosonde
na lokaciji Zagreb Maksimir

Meteorološka sondaža je utvrđivanje jednog ili više meteoroloških elemenata u slobodnoj atmosferi pomoću balona, radiosonda, raketa...

Meteorological sounding is the identification of one or more meteorological elements in the free atmosphere using balloons, radiosondes, rockets...

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
29	30	31	1	2	3	4
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8





Ples munja / Dancing lightnings, Šartovačko brdo, Moslavina, ©Tomo Egredžija

2024.

RUJAN SEPTEMBER

Ivan Stožir (12. 4. 1834. – 12. 2. 1908.)



Ivan Stožir bio je profesor fizike na Velikoj realki na Griču 3, u Zagrebu i prvi grčki motritelj koji je svoju dužnost savjesno obavljao punih 30 godina (1861. – 1891.). Od mjerena u fizikalnom kabinetu stvorio je Meteorološki opservatorij Kraljevske velike realke u Zagrebu iz kojeg će se razviti Geofizički zavod, DHMZ i Seizmološka služba.

Ivan Stožir worked as a physics professor at the Realschule at Grič 3 in Zagreb and as the first observer at Grič, who performed his duties with dedication and diligence for 30 years (1861-1891). The measurements at his physics laboratory led to the development of the Meteorological Observatory of the Zagreb Realschule, which the Geophysical Institute, the Croatian Meteorological and Hydrological Service (DHMZ) and the Seismological Survey later developed from.

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PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
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Prolaznost vremena / *Beneath a changing sky*, Matić poljana, Gorski kotar, ©Goran Gašparac

2024.

LISTOPAD OCTOBER

August Šenoa (14. 11. 1838. - 13. 12. 1881.)



August Šenoa najplodniji hrvatski pisac 19. stoljeća te tvorac moderne hrvatske književnosti, pohađao je Veliku realku na Griču, gdje je kao učenik završnih razreda povremeno provodio i meteorološka mjerena pod budnjim okom profesora Ivana Stožira.

August Šenoa is the most prolific Croatian author of the 19th century, widely considered to be the father of modern Croatian literature. He was a student of the Oberrealschule at Grič, where he occasionally performed meteorological measurements under the watchful eye of Professor Ivan Stožir as a student in the school's final grades.

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PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
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21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10



Ispod bijele duge / Under the white rainbow, Pakoštane, ©Šime Barešić

2024.

STUDENI NOVEMBER

Štefanić Tomaić, rođena Vukušić
Štefanić Tomaić nee Vukušić



Štefanić Tomaić, rođena Vukušić, jedina je žena koja je dosad radila na najvišoj meteorološkoj postaji u Hrvatskoj, GMP Zavižan (1594 m). Od 1. kolovoza 1972. do 31. listopada 1976., bila je odgovorna za praćenje vremenskih uvjeta na tom zahtjevnom mjestu, „Malecka sa Zavižana“ i danas je aktivna kao motriteljica na kišomjernoj postaji u Krasnom.

Štefanić Tomaić nee Vukušić is the only woman in history to have worked at the Main Meteorological Station Zavižan, the highest-altitude meteorological station in Croatia (1594 m). She was responsible for monitoring the weather at this challenging station between 1 August 1972 and 31 October 1976. Nicknamed "The Zavižan Kid", she is still active as an observer at the Krasno rainfall station.

PON MON	UTO TUE	SRI WED	ČET THU	PET FRI	SUB SAT	NED SUN
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2	3	4	5	6	7	8



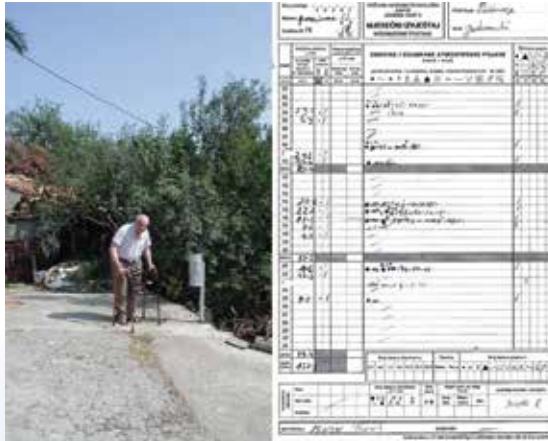


Povezanost / Bond, Novigrad na Dobri, ©Branko Nad

2024.

PROSINAC DECEMBER

Božo Kralj (9. 10. 1915. – 30. 1. 2023.)



Božo Kralj bio je najdugovječniji dobrovoljni motritelj u DHMZ-u. Tijekom punih 67 godina predano je pratio vremenske uvjete na kišomjernoj postaji Pridvorje u Konavlima. U 104. godini života, na vlastiti zahtjev, prestaje s motrenjem i u mirovinu odlazi s titulom istinskog kralja među motriteljima.

Božo Kralj is the volunteer observer with the longest service record at the DHMZ. He spent 67 years diligently monitoring the weather at the Pridvorje rainfall station in Konavle, and retired from the job at his own request at the age of 104 as a true paragon of his profession.

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Impressum

Izdavač/Publisher: **Državni hidrometeorološki zavod/Croatian Meteorological and Hydrological Service**

Priprema/Prepared by: **Služba za informiranje, odnose s javnošću i korisnike/Information, Client and PR Department**

Odgovorna urednica/Publishing Director: **dr. sc. Branka Ivančan-Picek**

Glavna urednica/Editor-in-Chief: **mr. sc. Kornelija Špoler Čanić**

Likovno oblikovanje/Design: **univ. spec. grafike Mia Vučić**

Urednički odbor/Editorial Board: **Ivana Grljak, Karmela Čaušić, Aleksandra Damjanović, Vesna Gugec, Željka Klemar,**

Ivan Lukac, dr. sc. Iris Odak Plenković, Dubravka Rasol, dr. sc. Tanja Renko

Prijevod/Translation: **Ana Levak Sabolović**

Tisk/Printed by: **Printera Grupa d.o.o.**

Naklada/Circulation: **2000 primjeraka/copies**

