The Temporal and Spatial Variability of Nitrous Oxide (N_2O) in the Southern Baltic Sea

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Submitted by: **Nwafor, Chukwudi Ejikeme**

Matric number: **1142102**

1st examiner: **Prof. Dr. Hermann Bange**

2nd examiner: **Prof. Dr. Anja Engel**

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1.0 Abstract

Coastal seas play an important role in the release of nitrous oxide (N_2O) into the atmosphere. Ongoing climate changes have a tremendous impact on ocean biogeochemical processes and are expected to affect the distribution of trace gases such as nitrous oxide in the water column. Here we present our data of N_2O measurements from Eckernförde Bay (Boknis Eck time series station) conducted between the years 2019 and 2023, as well as data from the SEA-EU cruise in May 2022. No studies on the effects of heatwaves on N_2O production in the Boknis Eck time series have been conducted for more than two decades. From our measured N_2O concentration data at the Boknis Eck time series site, it appears that heatwaves do not contribute to N_2O production. However, we did not record very high temperatures between these years.

Other observations such as N_2O saturation and apparent oxygen utilization at Boknis Eck were compared to the SEA-EU cruise transect. N_2O saturation for both measurements was positively correlated, with nearly all data being oversaturated, contrary with previous studies in the Southern Ocean. N_2O concentration showed no significant relationship with temperature and salinity. Excess N_2O (ΔN_2O) did not correlate with apparent oxygen utilization at the Boknis Eck time series, but showed a slight correlation during the SEA-EU cruise. Nitrate and nitrite were deficient throughout the water column at both stations.

Finally, this study focuses on the temporal and spatial variability of N_2O in the Baltic Sea from N_2O measurements and on determining the main N_2O production mechanism.

2.0 Introduction

2.1 Nitrous oxide and greenhouse gases

A greenhouse gas, also abbreviated as GHG, is a gas which absorbs and emits radiant energy (energy of electromagnetic and gravitational radiation) at thermal infrared wavelengths that causes the greenhouse effect. Greenhouse gases in the Earth´s atmosphere include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and ozone (O_3). These gases play an important role to maintain Earth surface temperature (https://www.britannica.com/science/greenhouse-gas2023). Without greenhouse gases, the temperature on the Earth's surface would be around -18 °C on average, which corresponds to 0 °F.

N_2O can be found abundant in the atmosphere. The atmospheric mole fraction of N_2O in 2020 reached up to 333 ppb (10^{-9}, parts per billion) with an increasing rate of about 1 ppb $year^{-1}$ (Vi, 2021). In the global long-term measurements, the tropospheric N_2O series show an annual growth rate of about 0.25 % $year^{-1}$ (Weiss, 1981; Prinn et al., 1990; Khalil and Rasmussen, 1992). Due to its low chemical reactivity, N_2O has an atmospheric residence time of about 110-180 years (Cicerone, 1989; Prinn et al., 1990; Ko et al., 1991; Minschwaner et al., 1993).

Nitrous oxide is also known to be one of the major scavenging gases of stratospheric ozone. It is the main source of nitric oxide (NO) radicals which contribute to depletion of ozone (Crutzen and Schmailzl, 1983). This effect of scavenging can be comparable to that of chlorofluorocarbons (CFCs) (Ravishankara, 2009).

The transformations of N compounds such as N_2O have important effects on the balance of marine and global N budgets. Therefore, understanding their formation, distribution and enabling factors is essential to understanding the fate of marine ecosystems and the future Earth system.

2.2 Formation of N_2O

Microorganisms play a major role in the formation of N_2O. Most of the N_2O emitted into the atmosphere either from natural or anthropogenic sources, is produced by microorganisms such as the denitrifying bacteria and

fungi in the ocean or in soils (Sloss, 1992). The world oceans accounts about (35%) and atmospheric chemical reactions contribute (5%) of the N_2O emissions (US Environmental Protection Agency, 2010; Tian et al., 2015)

2.3 Nitrification

Nitrogen is usually the limiting nutrient in the marine environment (Capone et al., 2008) Therefore, nitrogen cycle in the ocean is often a concern. Nitrification is a microbial process by which a reduced nitrogen compound such as ammonia is oxidized to nitrite and nitrate. Ammonia is present in seawater through natural and anthropogenic processes.

Nitrification is a two-step process where in the presence of oxygen NH_4^+ is oxidized to nitrite (NO_2^-), (NH_4^+ loses its electron and its oxidation state is increased). In the subsequent second step nitrite is oxidized to nitrate where nitrite loses its electron and oxidation state is increased. A simplified equation of the nitrification process is given below (Eq. 1).

Nitrification equation:

$$NH_4^+ \rightarrow NO_2^- \rightarrow NO_3^-$$

(Eq. 1)

In the marine environment, different microbes are responsible for each step. For example, Nitrosomonas, Nitrospira, and Nitrosococcus are ammonia-oxidizing bacteria (AOB). Ammonia-oxidizing bacteria initiate the nitrification process in the ocean (Martens-Habbena et al., 2009; Zehr & Kudela 2011). However, nitrification is also thought to be vertically decoupled from

primary production. For example, nitrification by ammonia-oxidizing archaea (AOA) does not seem to be inhibited by light, which means that nitrification occurs everywhere in the water column (Zehr & Kudela 2011). In the oceans, this information is not well understood. In some studies, (Beman et al., 2013; Sun et al., 2019; Zehr & Kudela 2011) it was reported that the bacteria Nitrospina and Nitrobacter are known to carry out this step in the ocean.

2.4 Denitrification

Likewise, nitrification, the denitrification is also a microbial process. The NO_3^- is further reduced to NO_2^- and nitric oxide (NO). Then NO is further converted into gaseous N_2O,which is finally converted into molecular N_2. This process takes place through enzymes of certain microbes. Denitrification process is completed by facultative anaerobic bacteria. These bacteria respire and reduce oxidized forms of nitrogen in response to the oxidation of electron donors such as organic material. Heterotrophic denitrifying microbes need low oxygen concentration of less than 10 % as well as organic carbon for energy (Pajares & Ramos 2019). That's why the N_2O production is high in low-oxygen (O_2) environments (e.g., Goreau et al., 1980; Löscher et al., 2012). This production usually accounts for the majority of N_2O formation in the ocean (Walter et al., 2006). A simplified equation of the denitrification process is given below (Eq. 2).

Denitrification equation:

$$NO_3^- \rightarrow NO_2^- \rightarrow N_2O \rightarrow N_2$$

(Eq. 2)

2.5 Distribution of nitrous oxide in the marine environment

Distribution of N_2O in the marine environment varies greatly depending on the environmental conditions and geographical location. In 1963 Craig and Gordon were the first to published on oceanic N_2O in the South Pacific Ocean. They observed the concentration of N_2O was lower than expected from its solubility equilibrium with atmospheric mole fractions previously reported in the continental atmosphere. This study suggested that N_2O should be an essential trace gas for

atmospheric studies. Later Junge and Hahn in 1971 and 1974 were the first to quantify and publish N_2O in the North Atlantic Ocean (Junge and Hahn, 1971; Hahn, 1974). A study by Yoshinari in 1976 reported the N_2O profiles in the Caribbean and Sargasso Seas. His investigation showed an inverse relationship between N_2O and O_2 concentrations in the water column (Yoshinari, 1976). According to his study nitrification is the major N_2O formation in the ocean that is the process of microbial oxidation of NH_4^+ to NO_3^-.

Another report by Cohen and Gordon (1978) describes the first study of the process of denitrification, in which N_2O is lost through microbial processes by converting N_2O to atmospheric N_2 in surface waters and the tropical Pacific Ocean. This study also provides information on the process of denitrification in the anoxic waters of the Saanich Inlet Basin off Vancouver Island.

The temporal and spatial distribution of N_2O in the world ocean is fairly well known. The highest N_2O levels in the open ocean are found in upwelling regions (Arévalo-Martinez et al., 2015) and production rates can be as high as 120 nM per day (Frey et al., 2020). The highly elevated N_2O concentrations may be located near regions where some of the lowest O_2 concentrations have been measured, usually in the O_2 minimum zone. Due to upward advection of N_2O enriched-waters, N_2O becomes more saturated in the surface waters of equatorial upwelling regions (Arévalo-Martinez et al., 2017). While in the Arctic Ocean shows low net N_2O emissions. Certain regions serving as net N_2O sinks and others as sources (Fenwick et al., 2017; Zhang et al., 2015).

Various physical, chemical and biological parameters such as temperature, salinity, dissolved oxygen, apparent oxygen utilization (AOU), nutrients, and microbial community (composition and abundance) influence net N_2O emissions from the ocean. Among that just three of these variables i.e. chlorophyll, O_2, and AOU, contribute about 60% of the observed variability in the N_2O concentration in the ocean (Yang et al., 2020), suggesting the importance of N_2O in productive upwelling areas. The importance of N_2O in productive upwelling areas (Stein and Yung, 2003). The correlations between N_2O and environmental parameters provide information about the conditions that influence the distribution of N_2O, but do not tell us anything about the microbes or metabolic processes involved in the activity.

2.6 Nitrous Oxide in the Baltic Sea

The Baltic Sea is the extension of the Atlantic Ocean and is bounded on its northern edge at 60° North latitude by land and the Gulf of Bothnia, on its north-eastern edge by the Gulf of Finland, on its eastern edge by the Gulf of Riga, and on the west by the Swedish part of the southern Scandinavian peninsula. The border around the Baltic Sea thus makes it an almost closed basin with only a limited connection to the North Atlantic/North Sea. For this reason, water exchange with the North Sea is limited. Massive anthropogenic activities such as industrial production, agriculture and the input of waste water occur (Force, 2019). This has led to high inputs of nutrients into the Baltic Sea. As a result, the deeper parts of the central Baltic Sea are affected by oxygen-depleted zones that are becoming more widespread (Carstensen et al, 2014).

Nitrous oxide emissions from coastal regions strongly rely on nitrogen inputs (Seitzinger and Kroeze, 1998; Zhang et al., 2010). The growing input of nitrogen causes eutrophication that has become a global downside in coastal waters resulting in increased productivity and intense O_2 depletion. Such scenario causes increased degradation of organic matter (Breitburg et al., 2018; Rabalais et al., 2014). The oxygen minimum zones (OMZ), whether in coastal waters or in the deeper ocean, could lead to favorable conditions of N_2O production (Codispoti et al., 2001; Nevison et al., 2003). However, it has also been suggested that N_2O production and emissions are very likely to increase in the near future, particularly in shallow anoxic or suboxic coastal systems (Naqvi et al., 2000; Bange, 2006). Therefore, monitoring the N_2O production in the sea is important to predict the future scenarios.

Regular measuring intervals and long-term observations can both be effective methods for tracking seasonal and inter-annual variations and identifying short and long-term trends of an ecosystem, which are necessary to predict how the ecosystem will grow in the future (e.g., see Ducklow et al., 2009).

However, in the light of current global environmental changes different factor are responsible for the formation and consumption of oceanic N_2O. For example, eutrophication, temperature rise, heatwaves, oxygen depletion in coastal and oceanic regions are some of the necessary factor to be considered. In order to achieve the knowledge gap of N_2O with different factors, time-series in different locations would helpful. Time-series measurements enable us to identify short and long-term trends of different chemical and physical parameters.

Here we try to understand the temporal and spatial distributions of dissolved N_2O from open and coastal Baltic Sea waters observations. We conducted monthly measurements of N_2O and other biogeochemical parameters such as nutrients, temperature, salinity and O_2 in the Eckernförde Bay (Baltic Sea) at the Boknis Eck time-series station site from 2019 to 2023. These data were complemented with N_2O measurements from the SEA-EU cruise to the southern Baltic Sea in May 2022. The data were collected and compared including targeted expeditions, repeated hydrographic surveys and time series station. All of which will contribute decisively to the development of our current knowledge.

The aim and objective of this study is to understand the temporal and spatial variability of the N_2O distribution in the southern Baltic Sea and decipher various factor responsible in the distribution of N_2O. The objectives of this study are given below.

3.0 Aim and objectives

- To decipher the temporal and spatial variability of the N_2O distribution in the southern Baltic Sea.

- To identify the potential effect of heatwaves on N_2O in the time-series measurements of Boknis Eck time series in Eckernförde Bay.

- To identify the major N_2O production and consumption pathways and their major drivers in the southern Baltic Sea.

4.0 Study sites, Material and Methods

4.1 Baltic Sea

Data were collected and analyzed from a research cruise in the Baltic Sea as part of an EU project (SEA-EU, European University of the Seas: https://sea-eu.org). The expedition took place from May 24, 2022 to July 3, 2022 onboard the Polish research vessel Oceanograf **(figure 1)**. The different sampling sites and stations along the Baltic Sea are listed in Table 1.

One of the largest brackish water areas in the world, the epicontinental and enclosed Baltic Sea (located between roughly 10°- 30° E and 54°- 66° N) has a surface area of 42,105 km^2 and a volume of 22,103 km^3, which correspond to 0.1% and 0.002% of the world's oceans, respectively. With a mean depth of 60 meters and a maximum depth of 460 meters, the Baltic Sea is quite shallow. It was created following the last glacier, around 10,000–15,000 years ago, and has experienced extraordinary changes in its fundamental physicochemical properties within such a geologically brief period of time. The Baltic Sea's "ecological age" now is roughly 8,000 years old (Lass and Matthäus, 2008). The Baltic Sea is located in the changing parts of Atlantic marine and Eurasian continental climate systems, which control the hydro climatic conditions of the sea. Salinity and temperature, which both have substantial gradients and decrease from the southwest to the northeast, are the most crucial. The quantity and frequency of saline water inflows (with high oxygen content) from the North Sea through the Danish Straits and riverine (freshwater) inflows, which are regulated by precipitation are the two main event that define the salinity regime of the Baltic Sea (Lass and Matthäus, 2008). Since the late 1970s, substantial inflows have happened less frequently. This has resulted significant stagnation in the Baltic Sea. The average annual influx of freshwater into the Baltic Sea, which is 481 km^3, that is roughly equal to the volume of saline water entering from the North Sea. The major source of freshwater inflow to the Baltic Sea comes via the Gulf of Bothnia, Gulf of Finland, and the Gulf of Riga. A permanent halocline that is situated between depths of roughly 70 and 100 meters divides the upper water layer from the deeper, more saline layer. In the shallower parts of the northeastern Baltic Sea, there is no halocline. Strong permanent haloclines and seasonal thermoclines throughout the summer significantly reduce vertical mixing of the water column. This leads to the formation of oxygen-depleted zones in a number of places, primarily in the central Baltic Sea's deep regions. The freezing temperatures of winter have a significant impact on the water temperature regime. The Bothnian Bay normally experiences the first sea ice formation in November to mid-May. Ice coverage's duration reduces from north

to south (Heino et al., 2008). In some coastal regions, during the summer, the water temperature could exceed to 25°C. The Baltic Sea water has a residence time of 25–35 year (Lass and Matthäus, 2008).

Sampling site	Station code	Sampling depth (m)	Latitude	Longitude
Gulf of Gdansk	MET1_BH MET1_MP MET1_REF	0-87 0-77 0-77	54°34.4955' N 54°34.2883' N 54°34.41122' N	19°08.1473' E 19°09.8997' E 19°09.08298' E
Arkona Basin	AB_G_1 AB_G_2 AB_NG	0-34 0-34 0-18	54°43.8642' N 54°43.9154' N 54°39.3617' N	13°29.5440' E 13°29.7419' E 12°38.2914' E
Mecklenburg Bay	MB_G_1 MB_G_2 MB_NG	0-21 0-21 0-19	54°15.89585' N 54°15.81542' N 54°31.46071' N	11°26.06539' E 11°25.5909' E 10°40.0482' E
Eckernförde Bay	EB_G1 EB_G2	0-22 0-22	54°28.74616' N 54°29.3467' N	09°54.32495' E 09°56.3498' E

Table 1: The different sampling sites and stations at SEA-EU cruise along the Baltic Sea

4.2 Boknis Eck time series station

Data from two study areas were used for this study. Monthly measurements were done at the time series station site of Boknis Eck in the Eckernförde Bay in Schleswig-Holstein, Germany **(figure 1)**. Samples were collected once a month from March 2019 to June 2023 from the research vessel Littorina, provided by GEOMAR-Helmholtz Centre for Ocean Research Kiel, Germany.

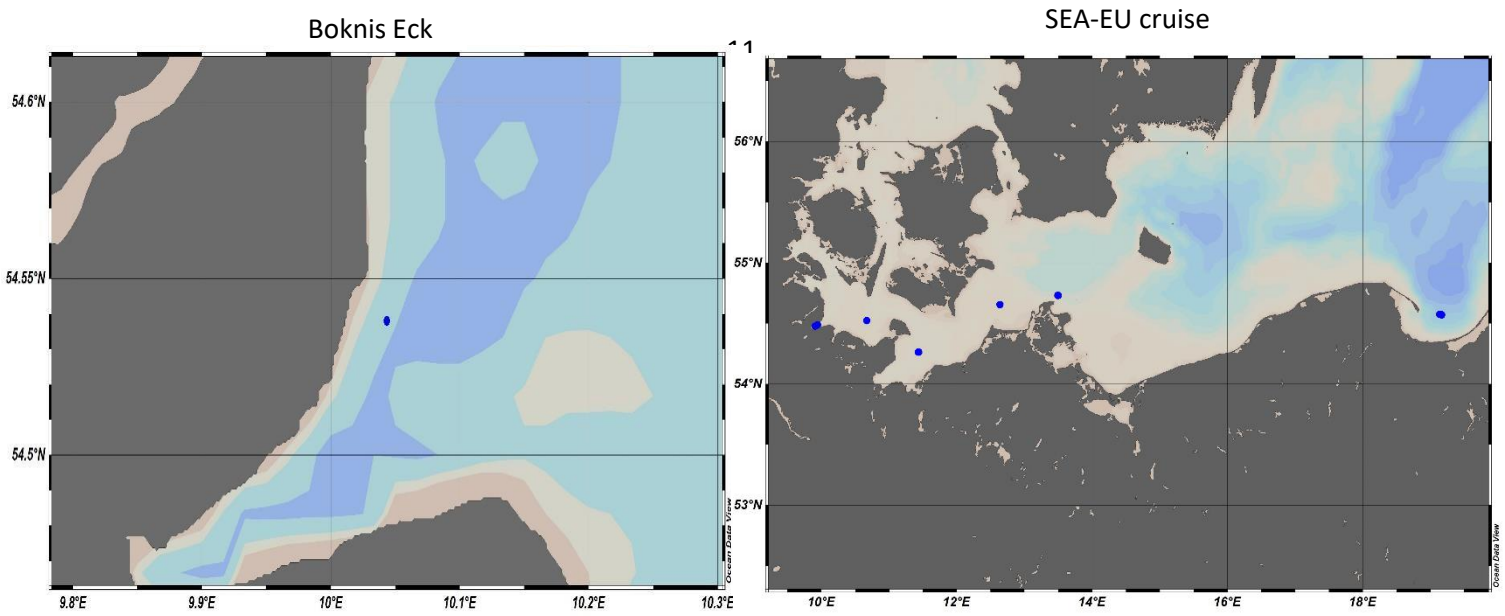


Figure1: The sampling stations of the two study areas, Boknis Eck time series and SEA EU cruise.

The Boknis Eck time series station is one amongst the oldest unendingly conducted marine time series stations within the world. The first samples were taken in 1957 and sampling has been conducted on a monthly base with solely minor interruptions since then (Lennartz et al., 2014). It's located in Eckernförde Bay (54^{o} 310 N, 10^{o} 020 E;) in the southwestern (SW) Baltic Sea, with a depth of roughly 28 m (Fig. 1). The sediments in the Eckernförde Bay are characterized by high organic matter load and sedimentation rates (Orsi et al., 1996; Whiticar, 2002), that are closely related to the spring and season algae blooms (Smetacek, 1985).

The monitoring of various physical, chemical, and biological parameters was started by Johannes Krey (Institut für Meereskunde, Kiel) in 1957 (Krey et al., 1980), and it has been carried out every month ever since with only two significant breaks in 1975-1979 and 1983-1985, during which no data are available. Starting with measurements of Secchi depth, temperature, salinity and oxygen with CTD on 30 April 1957, the number of parameters has increased almost continuously. Chlorophyll a (since 1960) and nutrients like nitrate, ammonium (1979), nitrite (1986) and phosphate (1957–1966, since1979) are now part of the monthly routine. Monthly samples have been taken from research vessels during half-day trips, the sampling usually starting around 10:00 to 11:00 in the morning. Seawater has been sampled at six standard depths (1, 5, 10, 15, 20, 25m) using Niskin bottles or the like during several casts, prepared onboard and cooled until further analysis. Analysis was usually carried out in the days following the cruise. The time series of BE provides a highly valuable data set for three main reasons. Firstly, provides continuous information on changes in the time span of decades. Secondly, there have only been minor changes in the methods used for determining the parameters, and careful calibration avoided shifts or inaccuracies in the data. This consistency strongly enhances the quality of the data, as shifts in the data signals through different methods of analysis can be excluded. Thirdly, the location of Boknis Eck was initially chosen because it reflects the hydrographic setting of the Kiel Bight (Krey et al., 1980). As there are no major rivers discharging into the Eckernförde Bay, riverine inputs of nutrients, for example, can be neglected; however, influences by direct runoff from land cannot be excluded.

4.3 Sampling and analytical methods

The seawater samples were collected with 10 L Niskin bottles installed on a rosette water sampler. Subsamples of 20 mL, in triplicate, were taken into opaque glass vials with butyl rubber stoppers and aluminum caps to prevent air – water exchange. Then the samples in the 20 mL vials were poisoned by injecting 0.05 mL of a saturated mercuric chloride solution ($HgCl_2$(aq.)). Mercuric chloride was used inorder to inhibit any form of biological activity. Then the two solutions were homogenized by shaking the vials. This step has been shown by Wilson et al., (2018) to be effective in completely inhibiting microbial activities in water samples. Thereafter, the samples packed upturned to prevent the formation of air bubbles due to temperature and pressure fluctuations.

4.3.1 Dissolved N_2O measurements

4.4 Calibration curve

We used two-point calibration procedure by using standard gas mixtures with 311.8 ± 0.2 ppb and 346.5 ± 0.2 ppb N_2O in synthetic air (Deuste Steininger GmbH, Mühlhausen Germany). The standard gas mixtures were calibrated against the NOAA standard scale, in the laboratories of the Air Chemistry Department of the Max Planck Institute for Chemistry in Mainz, Germany. The standard gases used were calibrated against the NOAA-PMEL primary standards, therefore the mole fractions of these standard gases are very accurate. For each measuring day, the gas chromatography was calibrated with two standard gases identified as Standard 5B and 14 with mole fractions of 1044.597 ppb and 355.775 ppb respectively. To obtain diluted gases, 3 mL of helium was added to 6 mL of the standard 5B, while 5 mL of helium was added to 4 mL of the standard 14. Therefore, translating to the dilution factors of 0.67 and 0.44 respectively. The standard gases were injected either as pure gas or mixed with helium with the aid of a gas mouse at varying proportions. An exemplary plot of a typical calibration curve was madefor the measurement of N_2O in our sample (figure 2).

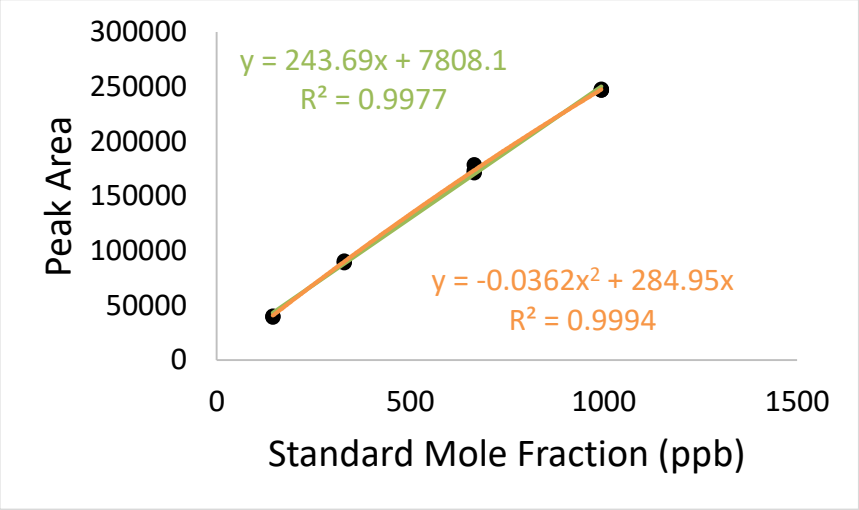


Figure 2: Plot of a typical calibration curve of standard gases for the calculation of dissolved N_2O. The orange line represents the quadratic fit while the green line represents the linear fit.

4.5 Measurement of N_2O from the samples

Dissolved N_2O in the seawater samples were measured in the Chemical Oceanography department at GEOMAR, Kiel, by using the static headspace method. The analytical method applied was a modification of the method described by Bange et al. (2001). Each of the vials was equipped with an air-tight syringe (VICI Precision Sampling, Baton Rouge, USA). This was used to manually inject 10 mL of high-purity helium (99.99%, Air Liquide, Düsseldorf, Germany). Then 10 mL of the sample was replaced with a helium headspace for each vial. The sample was then shaken with a vortex mixer (G560E, Scientific Industries Inc., NY, USA) for about 20 seconds and then left for at least 2 hours to achieve N_2O equilibrium between the air and water phases. After that, the samples were equilibrated at room temperature by continuously recording the temperature. A 9mL subsample from the headspace was used to flush a 2mL sample loop after passing through a moisture trap (filled with Sicapent, Merck Germany). Detection of N_2O was performed at 190°C on a packed molecular sieve column (6 ft×1/800 SS, 5 A, mesh size 80/100, Alltech GmbH, Germany) by Gas chromatographic connected with electron capture detector (GC-ECD). A mixture of argon and methane of ration 95:5 (by volume) was used as carrier gas with a flow of 21 mL min^{-1}.

Helium and head spaced samples, of 9 mL each, were injected into GC-ECD simultaneously, this step was important so as to flush the gas chromatograph of any impurities and/or leftover samples from previous measurements. Right after taking a 9 mL headspace sample from the vials and having injected it into the GC-ECD, the corresponding ambient temperature was recorded and this step was repeated for each measurement. After measurements, the chromatograms were processed using the ChromStar 6.3 desktop software. Each chromatogram comprises of several peaks recorded during the measurements, and each peak was evaluated individually through integration processes. The integration procedure allows for the adjustment of the baseline such that all the peaks in a chromatogram would be annotated and take note of the peak areas. The adjusted peaks were eventually transformed into gas molar fractions and the data was transferred into excel spreadsheets where further calculations were carried out. The mole fraction of N_2O measured in the headspace was calculated from the peak area using the quadratic fit. It is presented in equation(3).

$$x_{N2Oquadratic} = -\frac{b}{2a} \pm \sqrt{\left(\frac{b}{2a}\right)^2 + \frac{PA}{a}} \qquad (3)$$

The final concentration of dissolved N_2O in the samples was determined using equation (4) below, and the N_2O is given in nmol L^{-1}.

$$C_{gas}[\text{nmol } L^{-1}] = \left(\frac{\beta x P V w_P + \frac{xp}{RT} v_{hs}}{v_{w_P}}\right) \qquad (4)$$

Where β is the Bunsen solubility (in mol L^{-1} atm^{-1}), and was calculated using the solubility equation by Weiss and Price, (1980) at equilibration temperature and in situ salinity.

x is the dry gas mole fraction of N_2O (in nmol mol^{-1}).

P is the atmospheric pressure (atm).

V_{wp} and V_{hs} are the volume of water and volume of headspace, respectively, both in milliliter (mL).

R is the gas constant (0.08205746 L atm K^{-1} mol^{-1}).

T is the equilibration temperature (K).

The Bunsen solubility of N_2O ($C\,N_2O$ in mol L^{-1}) in seawater in equilibrium with moist air at P = 1 atm can be calculated with the polynomial given by Weiss and Price (1980). Where β is the Bunsen solubility (in mol L^{-1} atm^{-1}), T is for temperature in K, S stands for salinity and the values of the constants: A1, A2, A3, A4, B1, B2 and B3 are presented in the table 2 below.

$$\beta = exp\ \left(A_1 + A_2\left(\frac{100}{T}\right) + A_3 \ln\left(\left(\frac{T}{100}\right) + A_4\left(\frac{T}{100}\right)^2 + S\left(B_1 + B_2\left(\frac{T}{100}\right) + B_3\left(\frac{T}{100}\right)^2\right)\right)\right) \qquad (5)$$

A1	-165.8806
A2	222.8743
A3	92.07292
A4	-1.4843
B1	-0.0562
B2	0.0316
B3	-0.0048

Table 2: Constants for calculating the equilibrium solubility (in mol L^{-1} atm^{-1}) of N_2O from Weiss and Price (1980).

4.6 N_2O Saturation Calculation

N_2O saturation was calculated with the following formula:

$S = (N_2O_m/N_2O_{atm}) \times 100$

Where N_2O_m represents measured N_2O concentration, and N_2O_{atm} is the N_2O theoretical equilibrium concentration that depends on temperature, salinity, ambient air pressure and the atmospheric N_2O mole fraction at the time of sampling. Atmospheric N_2O data from NOAA Mace Head (MHD), County Galway, Ireland, were used for the calculation, matching the month and year of N_2O_m sampling. The data were collected from NOAA website: (https://gml.noaa.gov/aftp/data/trace_gases/n2o/flask/surface/txt/n2o_mhd_surface-flask_1_ccgg_month.txt).

The N_2O_{atm} data updated on the website stopped in December 2021, subsequent years were not updated, and the data show an annual atmospheric increase of approximately (1.09 ppb) for each year. Therefore, N_2O_{atm} values for 2022 and 2023 were estimated by adding (1.09 ppb yr^{-1}) to the previous year.

4.7 N_2O Production in the water column

The relationship between N_2O excess (ΔN_2O) and apparent oxygen utilization (AOU) is an important indicator for determining N_2O production in the water column. The formula used to calculate (ΔN_2O) is shown in the equation below and is calculated by subtracting the equilibrium concentration of N_2O from the

measured N_2O concentration.

$(\Delta N_2O) = N_2O_m - N_2O_{atm}$

Where N_2O_m is the measured N_2O concentration, and N_2O_{atm} is the N_2O equilibrium concentration.

The difference between the oxygen equilibrium value or solubility value and the measured concentration is called apparent oxygen utilization (AOU) and its calculated using the equation below.

$AOU = [O_2]_{eq} - [O_2]_{meas}$

Where $[O_2]_{eq}$ is the equilibrium concentration at the temperature and the salinity of the water sample according to Garcia and Gordon (1992) and $[O_2]_{meas}$ is the measured oxygen concentration of the sample.

AOU indicates the amount of oxygen consumed, considering that the oxygen concentration was in equilibrium with the atmosphere when the water was at the surface. Due to the influences of atmospheric pressure, whichin water production zones frequently lowers the degree of saturation, and bubble processes, which raise the degree of saturation, the surface water was probably not completely saturated (Stanley et al., 2012).

4.8 Oxygen and Nutrient Measurements

During both cruises CTD rosette was equipped with SBE oxygen sensor (Sea-Bird Electronics, Bellevue, WA, USA), was used to obtain dissolved oxygen profile. Additionally, oxygen was measured by Winkler titration method. Temperature, salinity, depth and pressure sensors were also mounted on the CTD rosette. Nitrate, nitrite and phosphate samples from the rosette were analyzed at GEOMAR chemistry laboratory by applying the methods described by Hansen et al. (1999).

4.9 Temperature and N_2O anomalies

The measurements at the Boknis Eck time series station conducted during this study allows us to determine the effect of the European heatwave in 2018 in the monthly time-series measurements of water temperature and dissolved N_2O at Boknis Eck (Lennartz et al., 2014; Ma et al., 2020). To this end, we computed the anomalies of water temperature and ΔN_2O at 1 and 25 m depth for the period of July 2005 to June 2023. The anomalies were defined as

$\Delta T = T - T_{i,\,avg}$ and

$\Delta(\Delta N_2O) = (\Delta N_2O) - (\Delta N_2O)_{i,\,avg}$

Where T is the measured monthly water temperature in the period of July 2005 to June 2023 at 1 and 25 m depth at Boknis Eck (Lennartz et al., 2014). $T_{i,\,avg}$ is the mean water temperature at 1 and 25 m depth of the respective month over this period at Boknis Eck. The resulting ΔT is the anomaly of the water temperature which is cleaned from seasonal differences throughout each year. $\Delta(\Delta N_2O)$ is calculated similarly to ΔT in the same time period using ΔN_2O; which is the monthly excess N_2O at 1 and 25 m depth. $(\Delta N_2O)_{i,\,avg}$ is the mean excess N_2O at 1 and 25 m depth of the respective month over this period at Boknis Eck. ΔN_2O was computed as the difference of the monthly measurements of dissolved N_2O at 1 and 25 m water depth (Ma et al., 2020).

5.0 Results

The results from Boknis Eck time series between 2019 to 2023 and the SEA-EU cruise in May 2022 were analyzed and compared to understand the temporal and spatial distributions of dissolved N_2O in the open and coastal waters of the southern Baltic Sea. The monthly measurements of nitrous oxide and other biogeochemical parameters at Boknis Eck are presented below.

5.1 Nitrous oxide variabilities at Boknis Eck

The annual distribution of N_2O varied from season to season of the year. In 2019 January to March were higher in N_2O than the rest of the year. Similarly, this pattern was observed in 2020, 2021, 2022 in (figure 3) except in 2023 January and April where N_2O were higher than the rest of the months. We observed similarconcentrations from surface to the depth of 25 meters. However, in 2022

the results showed higher concentrations of N_2O in all months of the year, which was more or less uniform from surface to depth.

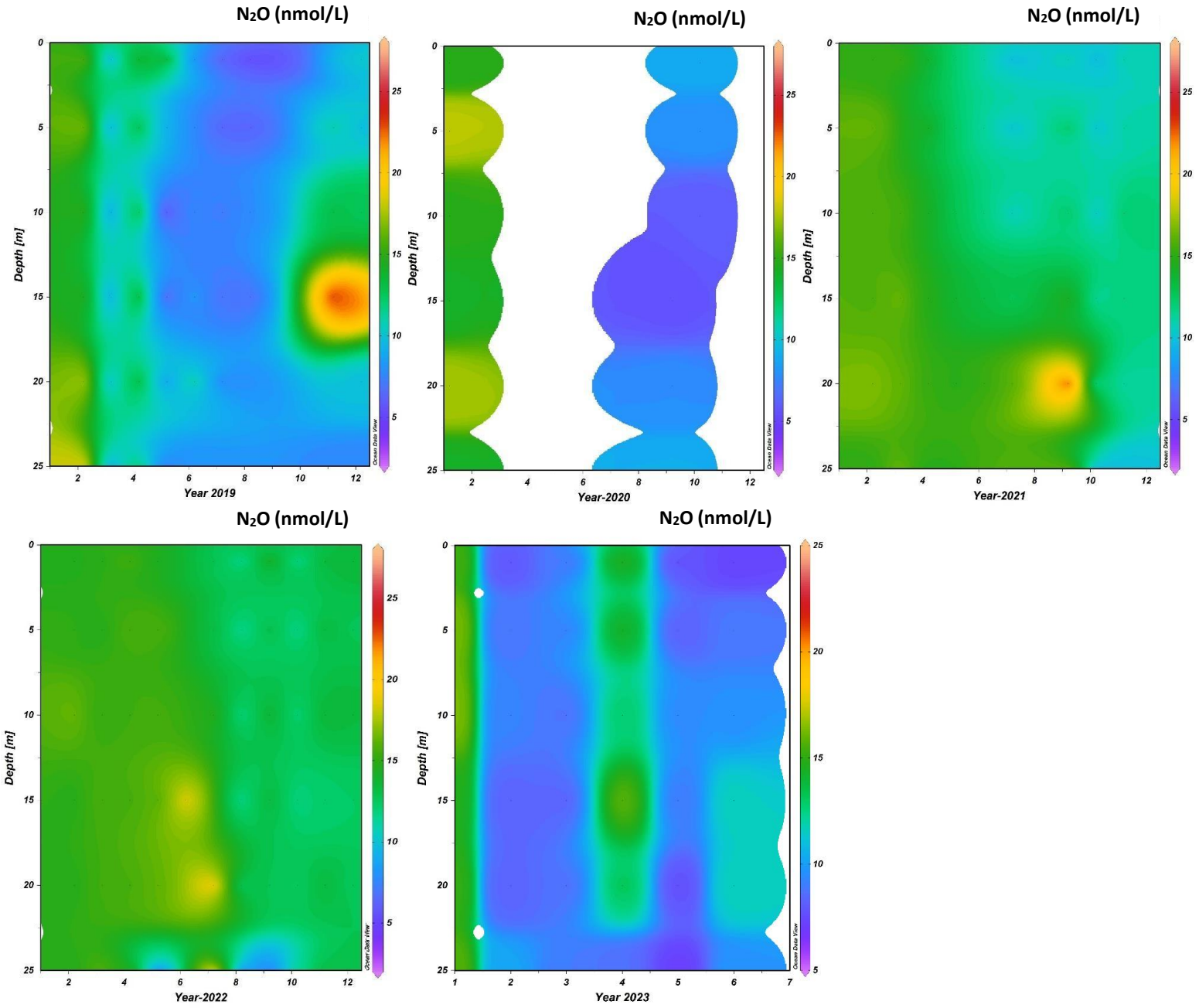


Figure 3: The seasonal cycle of nitrous oxide variability in the BE time series site from 2019 to 2023 at six standard depths. The x-axis displays the months of the years, with number representing the month. **Note**: In 2020 data were not collected for all months due to Covid-19 restrictions.

The concentration of N_2O was observed to be low from April to October of the year 2019 and 2020. However, the data of year 2020 does not include all months of the year. Only the samples of February, October and November were measured and analyzed, and the results showed high to low concentrations from the surface to the water column. In 2021 the surface (1-10 m) N_2O concentration in summer was lower than the deeper water (15-25 m). Nevertheless, the concentration of N_2O in the year 2021 was higher compared to the previous years. However, the concentration of N_2O was observed to be low in February, March, May and June of the year 2023.

The oxygen resulted to be higher in concentrations at surface waters in January to March of 2019, 2020 and 2022, (figure 4) although in 2023 the higher oxygen concentration extended to May. It decreased at the depth during the spring to the summer months. The lowest oxygen concentration was recorded at a depth of 20-25 m. In 2021 from January to March the oxygen concentrations is homogeneous. The average oxygen concentration for all years, both at the surface and at depth, was 311 µmol L^{-1} at 1 m depth and 184 µmol L^{-1} at 25 m depth. Overall result showed lowest O_2 concentrations at the depth of 20-25m during the August to December which can be as a result of decomposition of organic particles.

The oxygen data was compared to the N_2O concentrations to see if oxygen deficiencies had any influence on them. It showed that O_2 concentrations at the surface and depth had no relationship with N_2O concentrations.

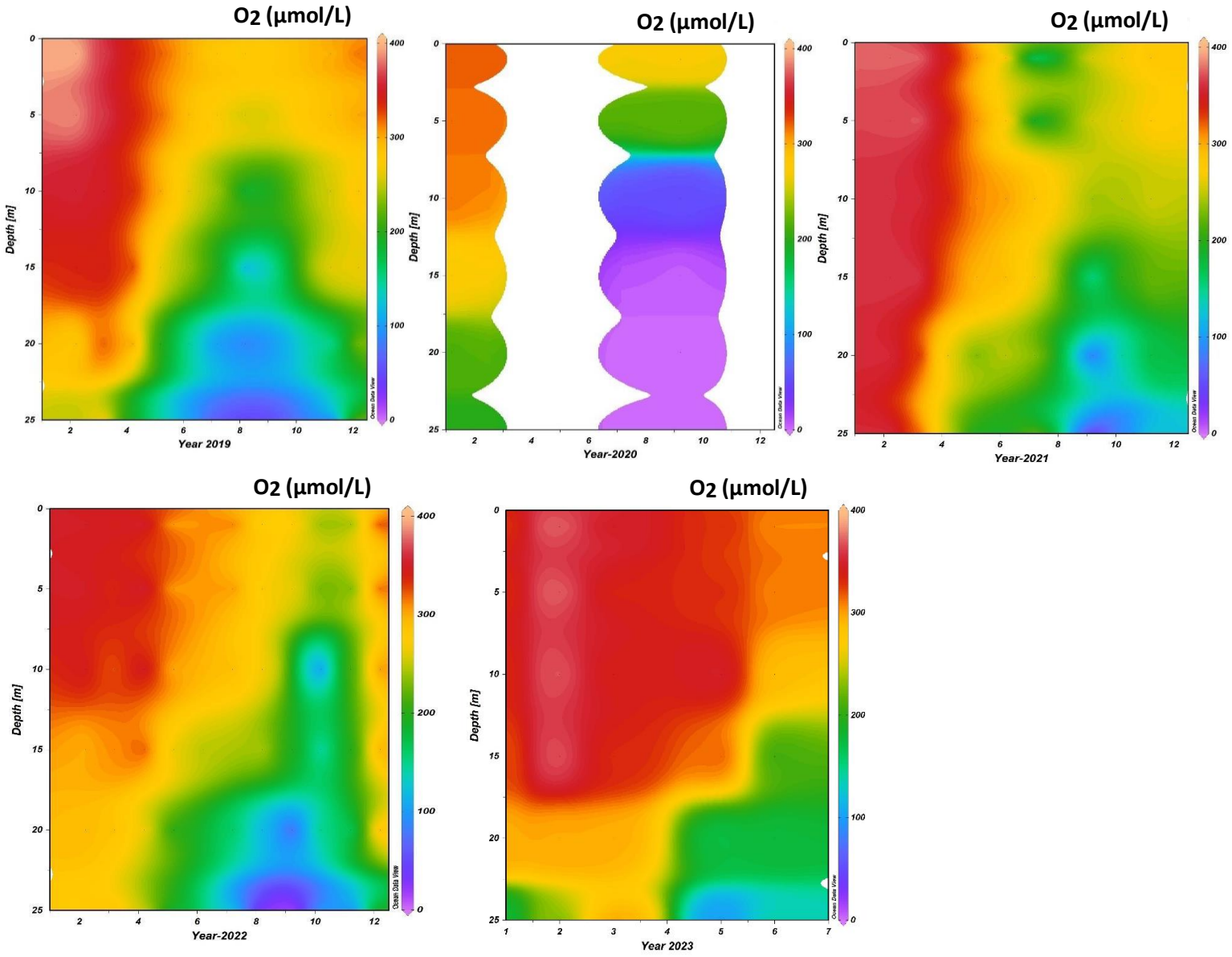


Figure 4: The seasonal cycle of oxygen variability in the BE time series from 2019 to 2023 at six standard depths. The x-axis displays the months of theyears, with number representing the month. **Note**: In 2020 data were not collected for all months due to Covid-19 restrictions.

5.2 Biogeochemical variation at Boknis Eck

Surface temperature was highest during the summer from July to October from 2019 to 2022. However, the high surface temperature in 2023 was found in May and June, and our data ended in June. In 2021, the summer was longer, and the water temperature remained high until December.

The results from 2022 shows to be warmer compared to the other years (figure 5). The temperature remained warm at the depth of 20 meters. However,in 2022, summer was short but warm, with average of 15 °C. During the winter months, the temperature was low from the surface to 25 m depth. During winter such as from January to March the water column temperature remains low and uniform.

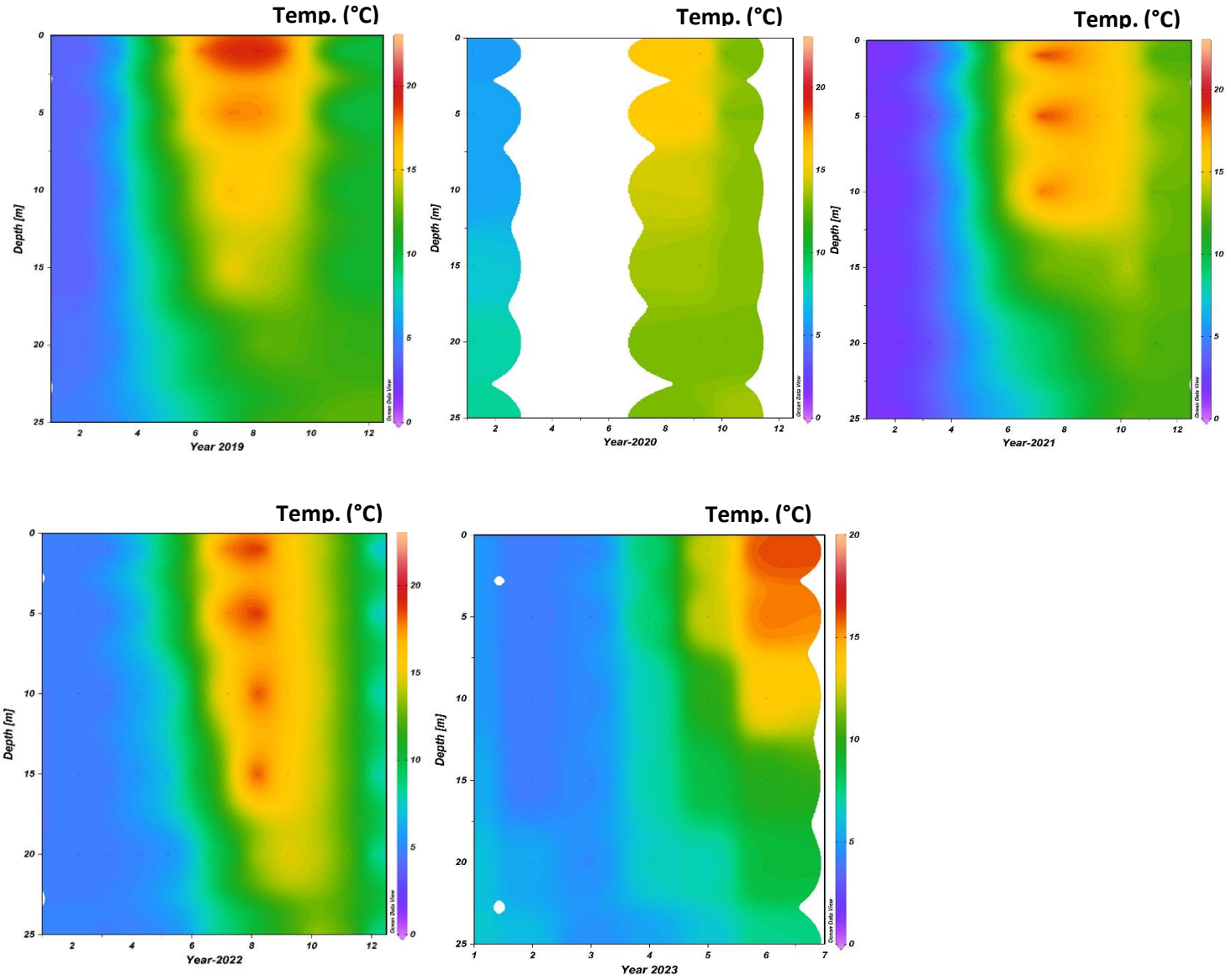


Figure 5: Temperature variabilities of BE time series from 2019 to 2023. The number on x-axis represent the month of the year**. NOTE:** in 2020 datafor all the months were not collected due to Covid-19 restrictions.

The salinity was lower at the surface and increased with the depth. Our results (figure 6) show that salinity being highest during the winter seasons and remained higherat the depth of 20-25 meters. In the summer the surface water salinity was observed to be lower except for 2020 due to lack of data.

In 2021, the salinity was higher than the previous year, being high from May to December at the depth. In November and December, the salinity remains more or less uniform from surface to depth. The lowest salinity in all years was observed in the summer months.

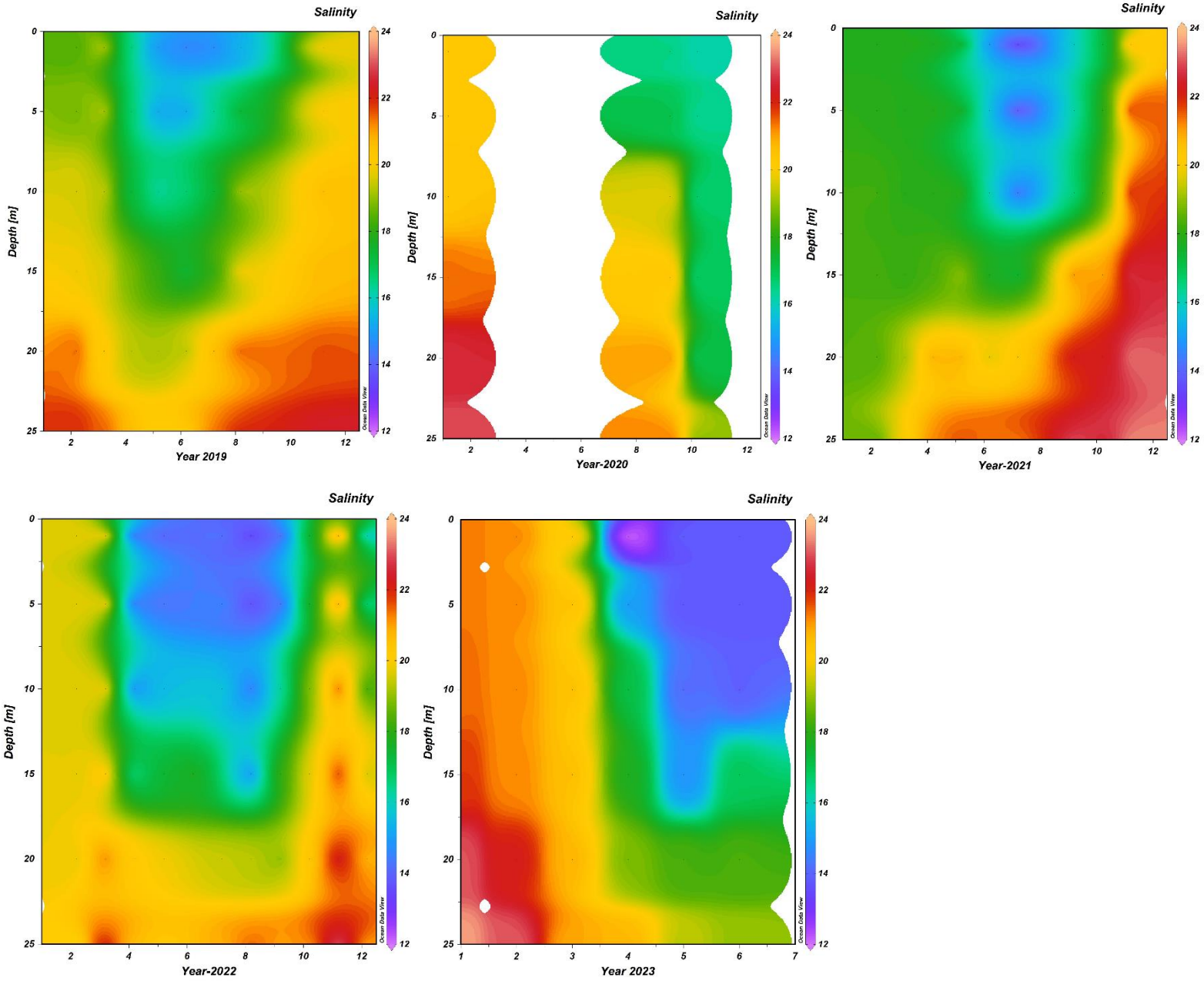


Figure 6: Salinity variabilities of BE time series from 2019 to 2023. The number on x-axis represent the month of the year**. NOTE**: in 2020 data for all the monthswere not collected due to Covid-19 restrictions.

5.3 Nitrate and nitrite variabilities at Boknis Eck

The seasonal distribution of NO_3^- and NO_2^- from 2019 to 2023 is low to high from surface to the depth (figures 7 & 8). During the winter of 2020 to 2023 show higher concentration of the NO_3^- and NO_2^- respectively from surface to the depth. Duringsummer the NO_3^- and NO_2^- concentrations were observed to be lowest at the surface water column. While the year 2019 observed to have lowest level of NO_3^- and NO_2^- at the surface waters throughout the year of 2019. The low concentration of NO_3^- and NO_2^- was same for the all observation except for the January and February.

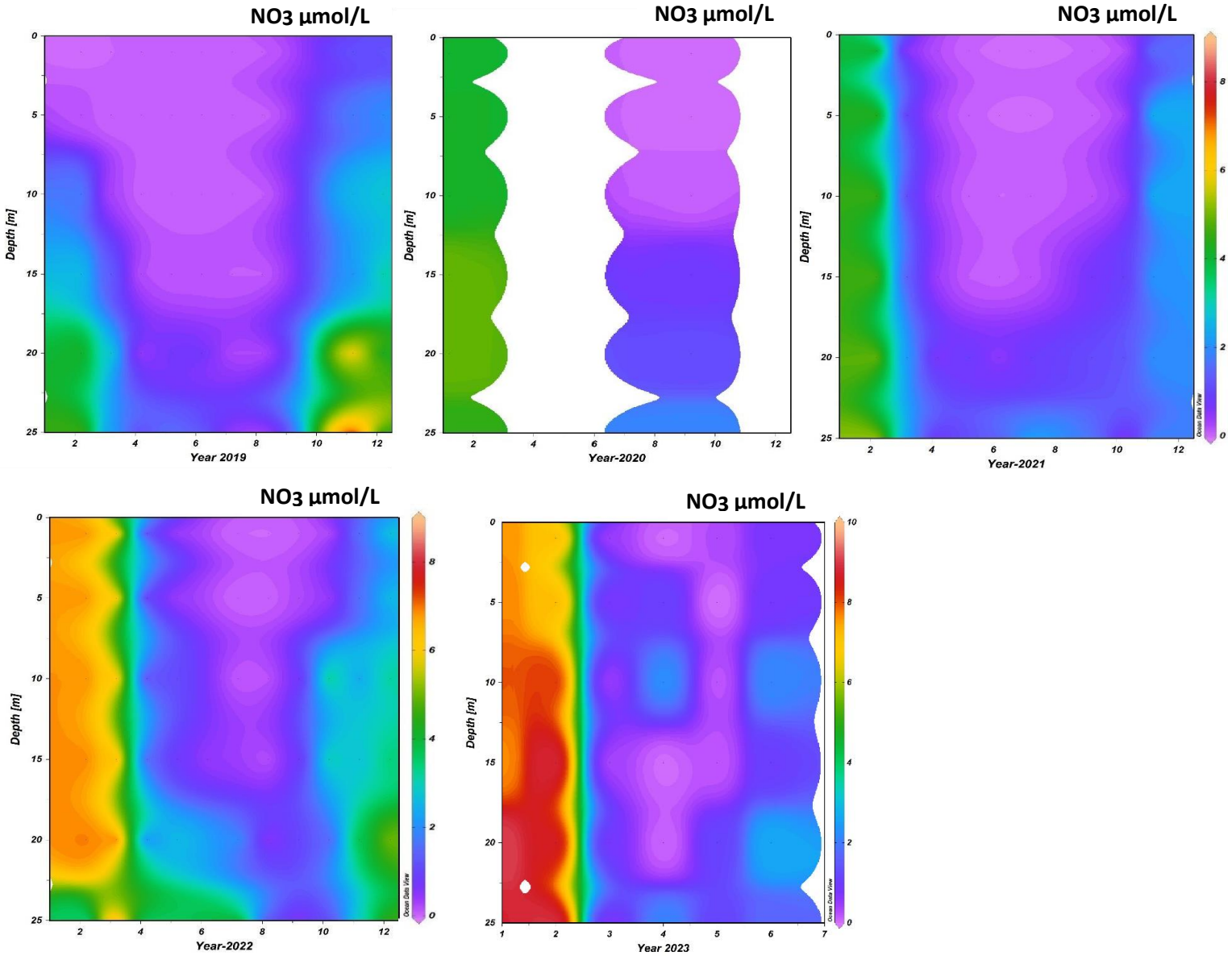


Figure 7: The seasonal cycle of nitrate variability in the BE time series from 2019 to 2023 at six standard depths. The x-axis displays the months of the years, withnumber representing the month. **Note**: In 2020 data were not collected for all months due to Covid-19 restrictions.

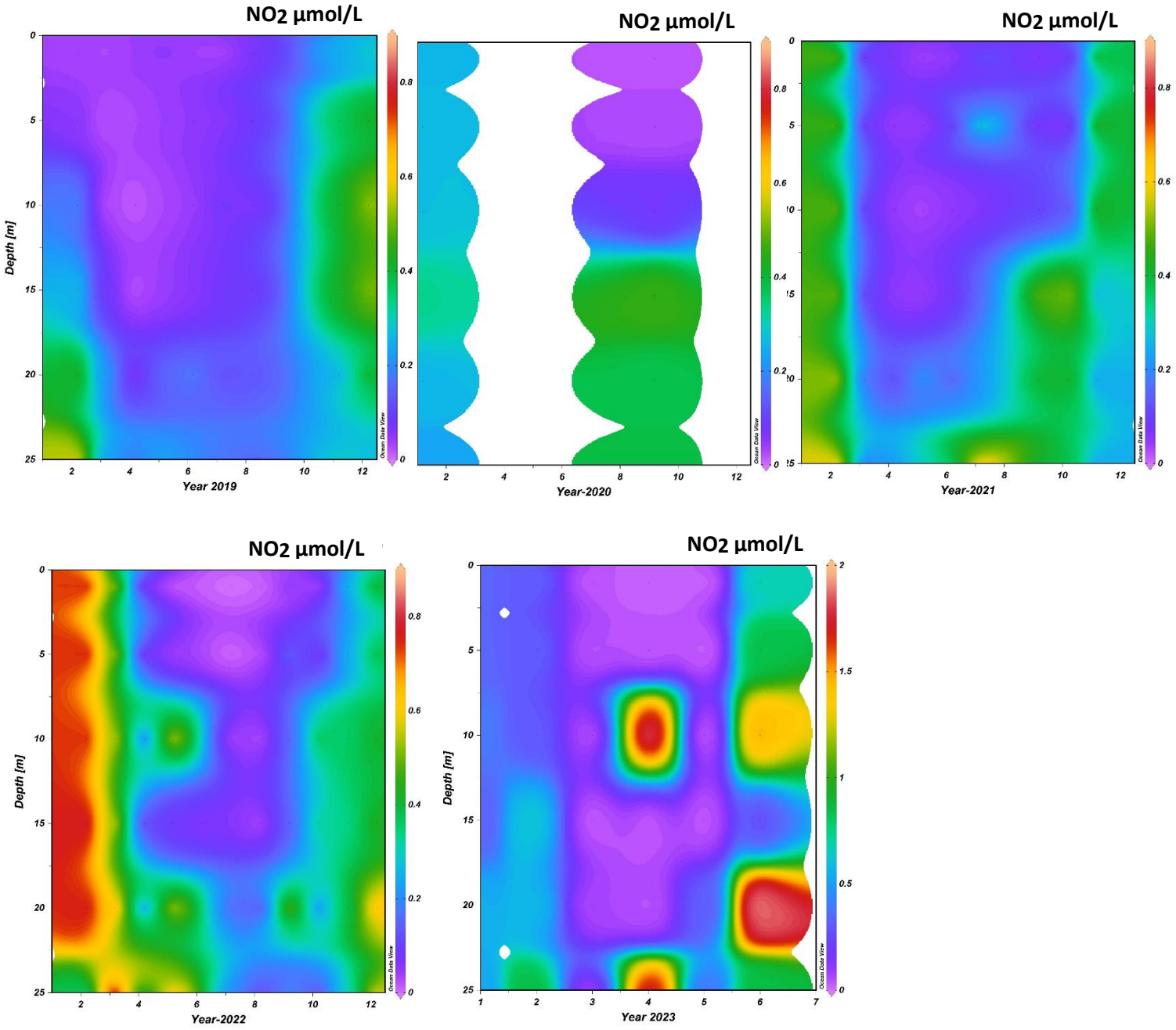


Figure 8: The seasonal cycle of nitrite variability in the BE time series from 2019 to 2023 at six standard depths. The x-axis displays the months of theyears, with number representing the month. **Note**: In 2020 data were not collected for all months due to Covid-19 restrictions.

5.4 Biogeochemical variation during the SEA-EU cruise in relation to N_2O

Dissolved N_2O was sampled in four different sites along the cruise transect and they were further grouped into two sites (Eckernförde Bay and Mecklenburg Bay) and (Arkona Basin and Gulf of Gdansk) due to their different depth.

Here we present the biogeochemical parameters (figures 9 & 10; NO_2^-, NO_3^-, temperature, salinity, and oxygen) as a function of depth on the y-axis and N_2O on the x-axis on the Eckernförde Bay and Mecklenburg Bay cruise track at six water depths (1-22 meters).

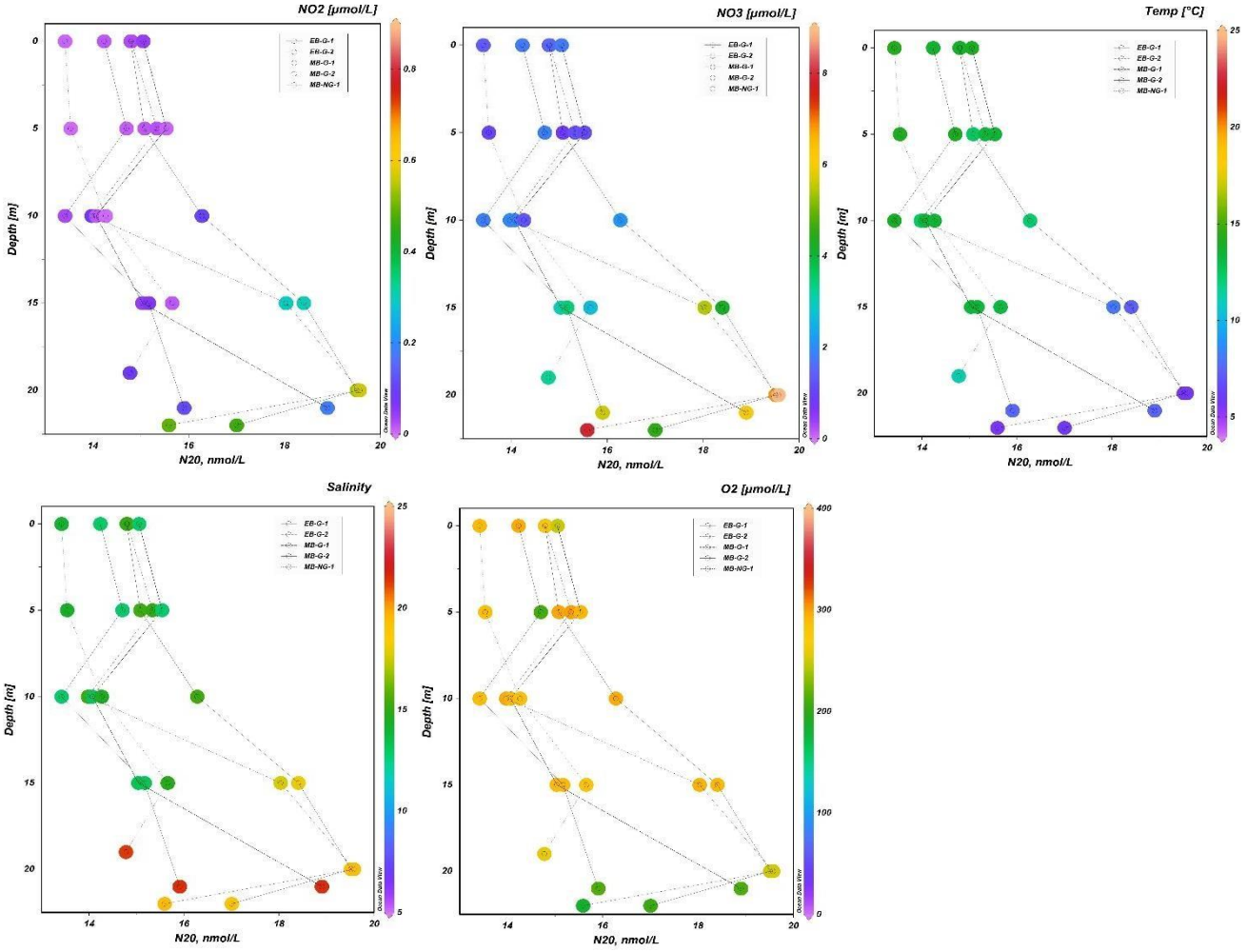


Figure 9: Distribution pattern of N_2O concentration in relation to O_2, NO_3^-, NO_2^-, temperature, and salinity during the cruise transect of SEA-EU at Eckernförde Bay and Mecklenburg Bay. **NOTE**: the color dots are represented by the biogeochemical parameters, while the first two data points represents Eckernförde Bay and the last three data points represents Mecklenburg Bay.

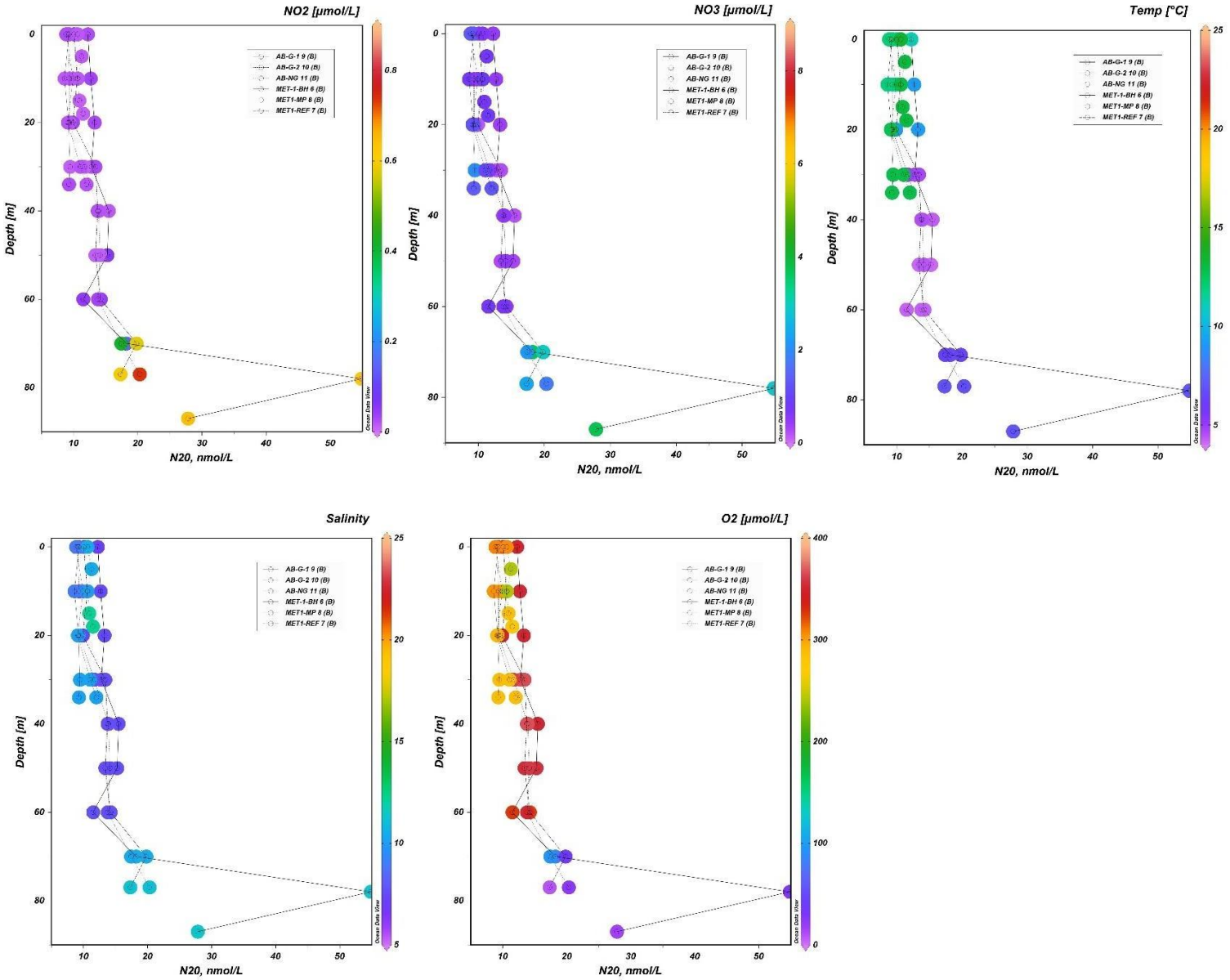


Figure 10: Distribution pattern of N_2O concentration in relation to O_2, NO_3^-, NO_2^-, temperature, and salinity during the cruise transect of SEA-EU at Arkona Basin and Gulf of Gdansk. **NOTE**: the color dots are represented by the biogeochemical parameters, while the first three data points represents Arkona Basin and the last three data points represents Gulf of Gdansk.

The NO_2^- and NO_3^- distribution from the cruise transect was very low in the surface water close to zero with the lowest values of 0.01 µmol L^{-1} and 0.14 µmol L^{-1}. As the water column depth increases, the concentrations of NO_2^- and NO_3^- slightly increased with values of 0.64 µmol L^{-1} and 8.89 µmol L^{-1} and N_2O concentrations partially increased from the water surface to the depth. The concentration of NO_2^- was almost low from the surface to the water column.

Temperature and oxygen were relatively high at the water surface between 1-15m and decreased at depth 20-22 m except oxygen concentrations that only changes at 22 m depth, while N_2O concentration changes from the surface to the water column (low-high). There is a relationship between N_2O concentration at water depth, temperature, and oxygen content. At the surface, the water is warmer, more oxygenated, and has a low N_2O concentration.

The salinity result shows high salinity at greater depth between 15-22 m, and low salinity at the surface. Salinity increases with depth due to factors such as evaporation and mixing of water masses, while N_2O concentration is lower at the surface and increases in the water column.

5.5 Biogeochemical variation during the SEA-EU cruise in relation to temperature

Here we present the biogeochemical parameters (figures 11 & 12; NO_2^-, NO_3^-, salinity, and oxygen) as a function of depth on the y-axis and temperature on the x-axis on the Eckernförde Bay and Mecklenburg Bay cruise track at six water depths (1-22 meters).

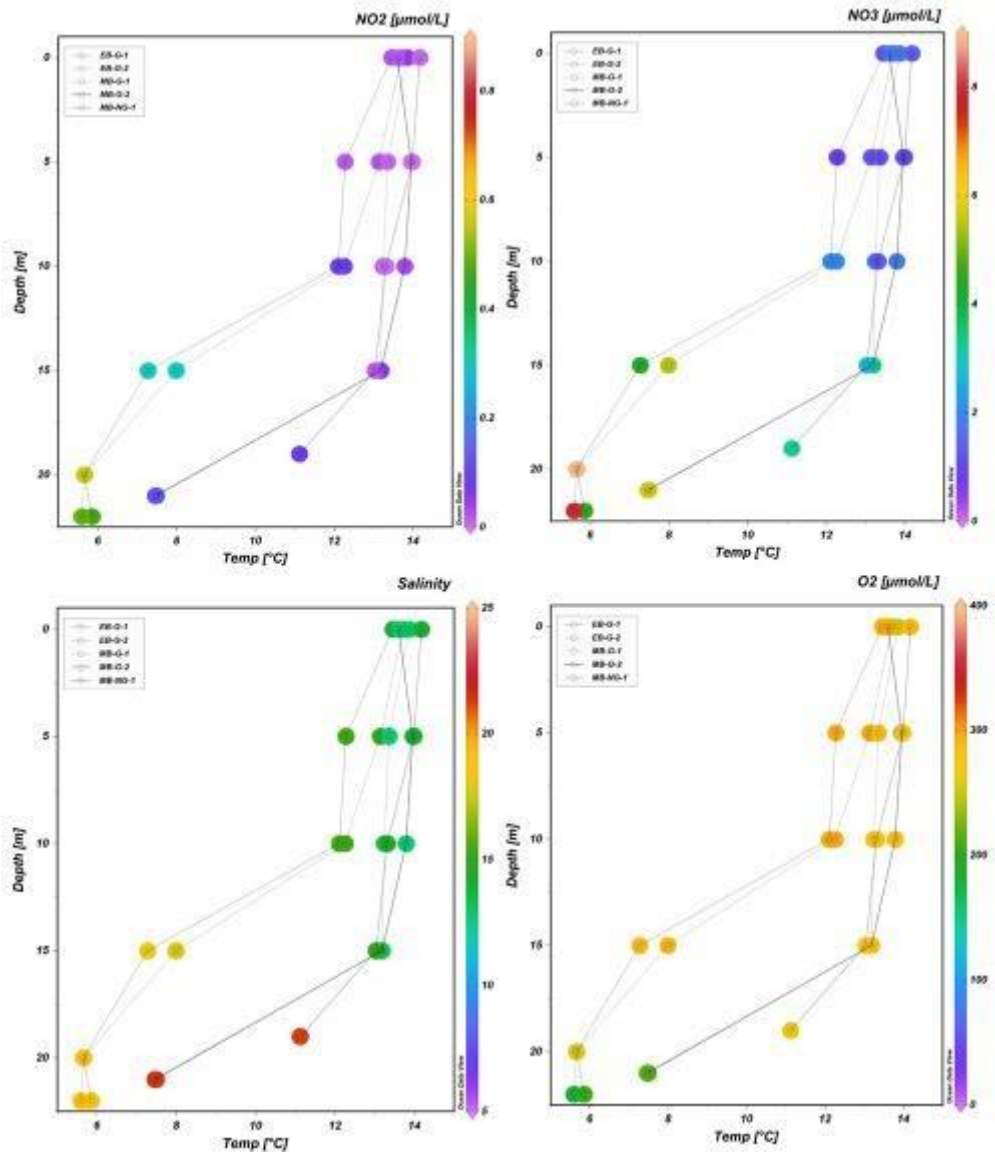


Figure 11: Temperature profile against salinity, oxygen, NO_3^-, and NO_2^- during cruise transect of SEA-EU at Eckernförde Bay and Mecklenburg Bay. **NOTE**: The color dots represents salinity, oxygen, NO_2^-, and NO_3^-, while the first two dots represents Eckernförde Bay and the last three dots represents Mecklenburg Bay.

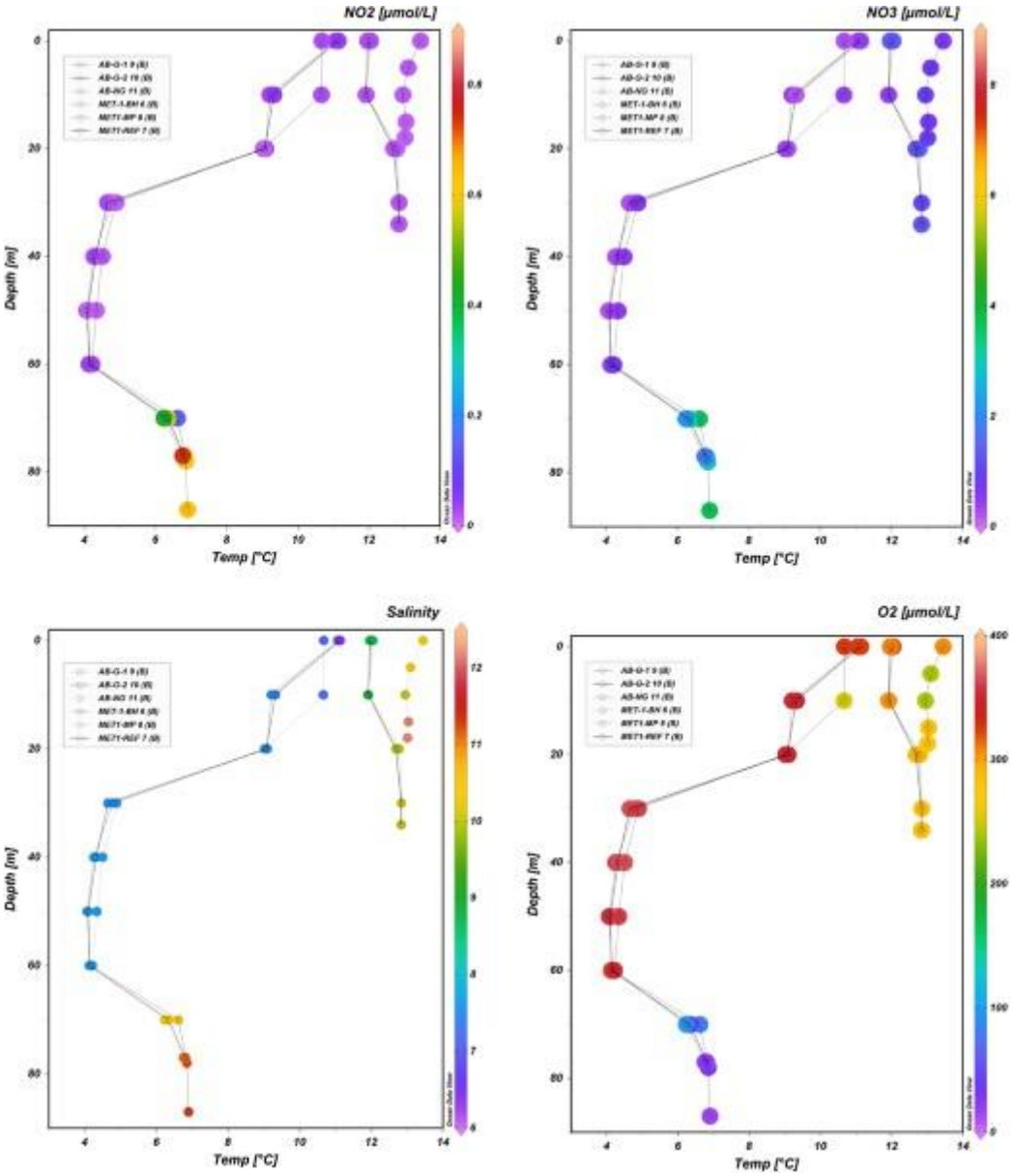


Figure 12: Temperature profile against salinity, oxygen, NO_3^-, and NO_2^- during cruise transect of SEA-EU at Arkona Basin and Gulf of Gdansk. **NOTE**: The color dots represents salinity, oxygen, NO_3^-, and NO_2^-, while the first three dots represents Arkona Basin and the last three dots represents Gulf of Gdansk.

The nitrite and nitrate concentrations were slightly higher at the depth and lower at the surface. As the water column depth increases, the concentration of NO_2^- and NO_3^- increased, and the temperature concentration decreased from the water surface to the depth. This shows that surface water was warmer and associated with exposure to sunlight.

The salinity result showed high salinity at higher depth and low at the surface. Salinity increased with depth due to factors such as evaporation and mixing of water masses, while temperature concentration was higher at the surface and decreased in the water column.

Oxygen concentration was higher at the water surface and decreased in the watercolumn, and surface water was warmer, indicating high temperature at the surfaceand lower temperature at depth.

6.0 Discussion

We conducted measurements of dissolved N_2O in two different regions of the southern Baltic Sea, (1) in the Eckernförde Bay (Boknis Eck time series site) and (2) during a cruise with a Polish research vessel at four stations in the Gulf of Gdansk, Arkona Basin, Mecklenburg Bay, and Eckernförde Bay. In this chapter, we discuss the results of measurements during both the Littorina cruises from 2019 to June 2023 to Boknis Eck time series site and the SEA-EU cruise in May 2022 in the context of seasonal variability, distribution pattern, and heatwave effects (at Boknis Eck).

6.1 Seasonal variability

The annual distribution of N_2O from year 2019 to 2023, between January to March N_2O concentration was higher in 2019 to 2022 from the surface to the depth (figure 3) although in 2023 N_2O concentration was higher in January and April from surface to depth. However, in 2022 the result shows higher concentrations of N_2O in all months of the year, which is almost homogenous from surface to depth. The concentration of N_2O was low from April to October in the year 2019 and 2020, in 2023 it was low in February, March, May and June. In 2021 the surface (1-10 m) N_2O concentration in summer was lower than deeper water (15-25 m). Nevertheless, the concentration of N_2O in the year 2021 was higher compared to the previous years.

From 2005 to 2017, there were remarkable depth and time-dependent variations in N_2O concentrations at the BE time-series station. With a range of 1.2 to 37.8 nmol L^{-1}, the average N_2O concentration was 13.9 nmol L^{-1} (Ma et al., 2019). Although our N_2O concentrations data at Boknis Eck time series station from 2019 to 2023 range from 3.93-27.42 nmol L^{-1} and the average N_2O concentration was 12.36 nmol L^{-1} which almost similar with paper published by Ma et al., (2019). Given the low anthropogenic influence in the North Pacific Subtropical Gyre, this value was higher than results from surface water at the ALOHA station (5.9-7.4 nmol L^{-1}, average 6.5 0.3 nmol L^{-1}; Wilson et al., 2017). Past N_2O concentrations at the BE were significantly below those at the time-series station in the nearshore upwelling region off Chile (2.9-492 nmol L^{-1}, averaging 39.4 ± 29.2 nmol L^{-1} in the oxyclines and 37.6 ± 23.3 nmol L^{-1} in bottom waters; Farías et al., 2015) and a quasi-time-series station off Goa (Naqvi et al., 2010), where significant N_2O depletion in deep waters during anoxic events was observed in both areas. Here, primary production in summer exerts a strong influence on biogeochemical cycles, and nitrification is thought to be inhibited by light in the well-lit surface water (Grundle and Juniper 2011). However, our N_2O data in some months were almost in agreement to the time series station from Saanchi Inlet (∼0.5–37.4 nmol L^{-1}, average 14.7 nmol L^{-1}; Capelle et al., 2018) that showed significant temporal and depth dependent variability in the course of their time series. Our observed N_2O concentration in some months are in agreement with data of Wilson et al., (2017) which from 7.7 to 12.7 nmol L^{-1}.

The oxygen data showed higher concentration at the surface water between January to March in 2019 to 2022, and it extended to April in 2023 (figure 4). It decreased at depth during spring and summer months. At depth of 20-25 m lowest oxygen concentration was recorded. In 2021 from January to March the oxygen concentration was homogeneous from surface through the water column. In general oxygen concentration is lowest at depth of 20-25 m during August to December. However, the study conducted by (Lennartz et al., 2014) showed a steady decline in oxygen concentration and oxygen saturation at a depth of 25 meters, the major oxygen decline occurred from April to September in range of 0.5 µmol L^{-1} yr^{-1} and 0.8 µmol L^{-1} yr^{-1} for summer months and trends that indicate potential environmental changes and challenges to oxygen concentrations in the aquatic environment. The spread of hypoxic and even anoxic zones in marine coastal ecosystems is known worldwide and is often linked to eutrophication (Diaz and Rosenberg, 2008). The Baltic Sea is affected by a large-scale oxygen decline (HELCOM, 2009), which has been observed since 2001.

Surface temperature was highest during the summer from July to October from 2019 to 2022, and in 2023 the surface temperature was highest from May to June (figure 7). In 2021, the summer was longer, and the water temperature

remained high until December. However, the temperature patterns at BE were well in line with the patterns in other Baltic Sea regions. The trend is positive and is 0.2 degrees Celsius every decade (Feistel et al., 2008) which is within the spectrum of earlier detected patterns. At the same time, the temperature in the bottom water did not rise as quickly as at the surface, which led to a significant overall increase in the density gradient in spring (Lennartz et al., 2014). Stratification therefore begins earlier in the year, which in turn can lead to less oxygenation.

The salinity was lower at the surface and increased with the depth. Our results show that salinity being highest during the winter seasons and remained higher at the depth of 20-25 meters' (figure 8). Hence, the results of the BACC team of authors (BACC, 2008). They reported no significant changes in salinity in the 20th century at numerous measuring stations (BACC, 2008). Salinity fluctuates in the short term between years due to large-scale advection (Lehmann et al., 2013).

The seasonal distribution of NO_3^- and NO_2^- from 2019 to 2023 is low to high from surface to the depth (figures 5 & 6). During the winter of 2020 to 2023 show higher concentration of the NO_3^- and NO_2^- respectively from surface to the depth. During summer the NO_3^- and NO_2^- concentrations were observed to be lowest at the surface water column. However, since the mid-1980s, major nutrient declines have been reported at the BE time-series station, but bottom O_2 concentrations have continued to decline over the past 60 years, according to Lennartz et al. (2014). According to Meier et al. (2018) and Lennartz et al. (2014), the extended stratification period at the BE time-series station and temperature-driven depletion of O_2 in bottom waters are two factors leading to the continued decline in oxygen.

The highly elevated N_2O concentrations may be located near regions where some of the lowest O_2 concentrations have been measured, usually the O_2 minimum zone. Oxygen being a major contributor to N_2O production, our result of measured N_2O concentrations at Boknis Eck between year 2019 to 2023 does not show clear significant of changing oxygen conditions so much (figures 3 & 4). In winter season between January to March of the all years' oxygen concentration was almost homogeneous from 1-20 m depth except in the year 2021 where oxygen concentration is homogeneous from surface to depth (figure 4). The N_2O concentrations at winter season were almost homogeneous and show no clear relationship with oxygen.

The detected N_2O concentrations in the surface waters of the shallow stations and in the harmonic water bodies were close to equilibrium, which can be attributed to the exchange with the surrounding atmosphere. N_2O

concentrations in winter waters were also close to equilibrium, although with higher absolute values than in the surface layer. Here, hydrographic factors were mainly responsible for the observed N_2O distribution. When N_2O concentrations were in equilibrium with the atmosphere during winter convection, this water mass was generated, and this signal was maintained during summer stratification of the uppermost layer (Walter et al., 2006).

6.2 Heatwave impact on N_2O

Figure 17 shows the anomalies of T and ΔN_2O at 1 and 25 m water depths from July 2005 to June 2023. A pronounced temperature anomaly is slightly visible at 1m depth in the year 2018, 2019 and 2021, which also reflects the heatwave that occurred in northwestern Europe in August 2018 (Kueh and Lin, 2020). The maximum ΔN_2O anomaly at 1 and 25 m depths is visible in November 2017 and thus not related to the heatwave signal of the temperature anomaly at either depth. The maximum temperature anomaly is found at 1 m water depth in 2018, 2019 and 2021. Also, the 2018, 2019 and 2021 heatwave signal is not visible in the ΔN_2O anomalies. However, our data show no significant relationship between water temperature anomalies and ΔN_2O at 1 and 25 m water depths in relation to the heatwave in higher N_2O production that is temperature dependent. As marine autotrophic and heterotrophic processes display sensitivities to temperature, ocean warming might result in changes of the bacterial community structure and hence in the changes of N_2O production. Changes in ocean temperature also affect the solubility of N_2O (Freing et al., 2012). Thus, the signal of the heatwave is not visible in the anomalies of ΔN_2O. Generally, there is no relationship between the water temperature anomalies and ΔN_2O anomalies at both 1 and 25m depths. High temperature can facilitate microbial activities responsible for N_2O production. Increased temperature can accelerate the rates of denitrification and nitrification, resulting to higher N_2O production rates in certain oceanic regions (Poh et al., 2015). However, our data are not in agreement with a heatwave-induced increase in N_2O concentrations at Boknis Eck (Eckernförde Bay). Hence, our measurement of dissolved N_2O was conducted in a euphotic zone1-25 m depth which is oxic water and has a clear relationship regarding N_2O production via nitrification.

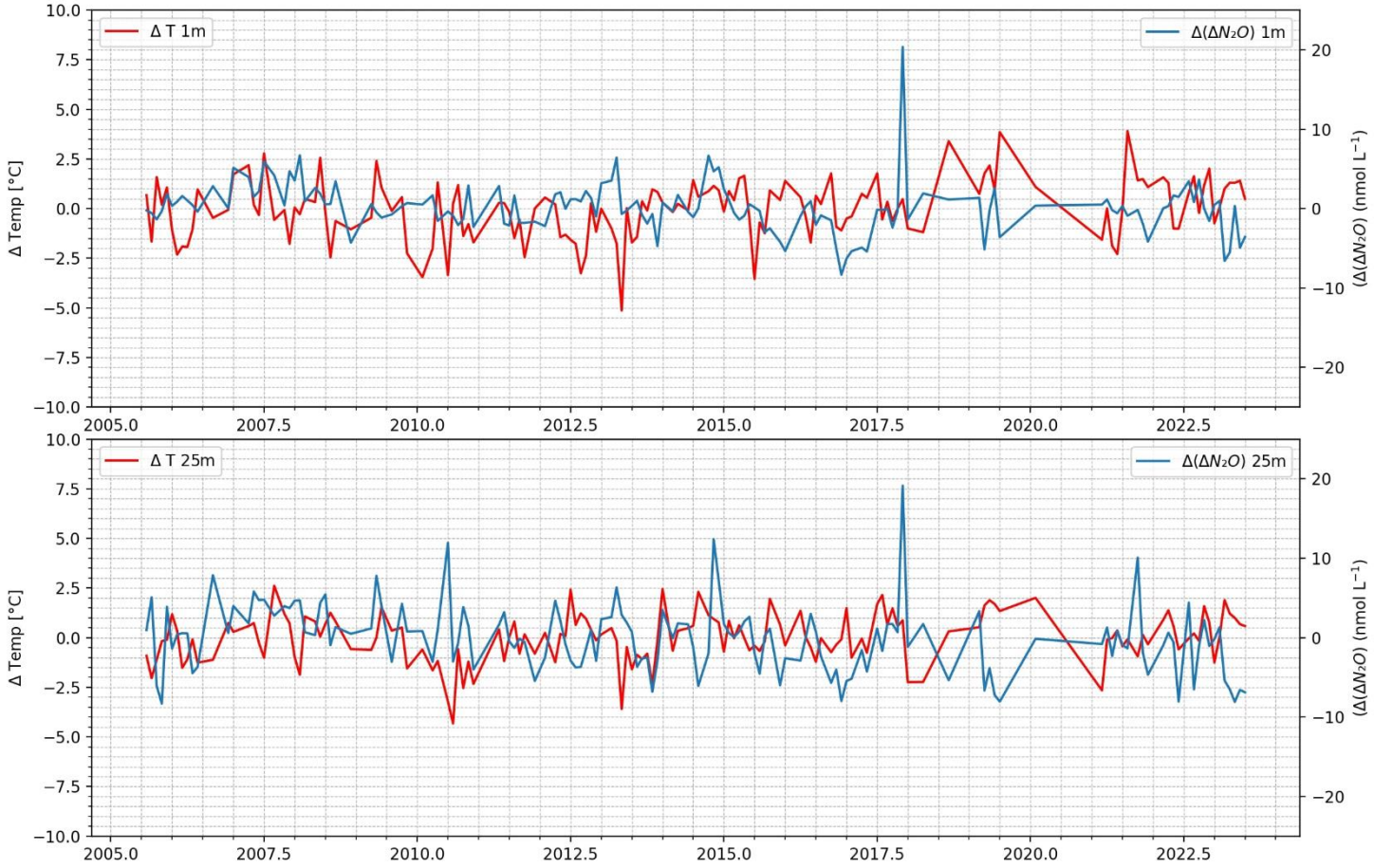


Figure 17: Monthly anomalies of temperature ($\Delta(\Delta N_2O)$, blue line right y axis) and (ΔT, red line, left y axis at 1 and 25 m from 2005 to 2023.

6.3 N_2O distribution pattern

We discuss vertical distribution of N_2O in the SEA-EU cruise conducted in May 2022. In order to identify the N_2O concentration in this transect, we group the sites into two groups due to their difference in depth. Eckernförde Bay and Mecklenburg Bay are plotted together which have bottom depths of up to 33 m, while Arkona Basin and Gulf of Gdansk are plotted together which have bottom depths up to 87 m. The N_2O concentration in the Eckernförde Bay and Mecklenburg Bay in the surface and water column were homogenously distributed. The average dissolved N_2O concentrations in the surface water was approximately 14 nmol L^{-1} and water column it was approximately 15 nmol L^{-1} (figure 9). The N_2O concentrations in the Arkona Basin and Gulf of Gdansk were relatively homogeneous at the surface water and changes in the water column. The average dissolved N_2O concentrations in the surface water and the water column were approximately 9 nmol L^{-1} and 18 nmol L^{-1}, respectively. Though the highest concentration of dissolved N_2O observed was between 27 and 54 nmol L^{-1} in Gulf of Gdansk at a depth of 70-80 m (figure 10). However, the high concentration of dissolved N_2O at great depth where oxygen concentration declines could be as a result of stratification, sinking of organic particles. The sinking and decomposition of these particles were as a result of phytoplankton bloom and N_2O production below chlorophyll-rich layer, which coincided with the layer of minimum oxygen (Boontanon et al., 2010).

These vertical N_2O distributions are in agreement with the earlier studies of N_2O profiles from the central Baltic Sea (Rönner, 1983; Rönner and Sörensson, 1985; Brettar and Rheinheimer, 1992). However, they conducted their work both in oxic and anoxic conditions in the deep central Baltic Sea. When oxic conditions prevailed between August and September 1977, Rönner (1983) collected N_2O profiles in the central Baltic Sea immediately following a significant inflow event in 1976-1977 (Schinke and Matthäus, 1998). Moreover, these N_2O profiles are similar to our profiles, measured in the well oxygenated areas of the cruise transect in May 2022.

In the Baltic Sea, nitrification and denitrification are two biological processes that have been investigated in previous studies, both of which showed the presence of N_2O producing bacteria (Bauer, 2003; Brettar and Höfle, 1993; Brettar et al., 2001). Relationships between N_2O and oxygen or nitrate are commonly used to determine both processes (Yoshinari, 1976; Yoshida et al., 1989; Cohen and Gordon, 1978; Butler et al., 1989).

Our data in the SEA-EU cruise (table 3) showed slight significant relationship between N_2O and oxygen or nitrate that N_2O production could be as a result of denitrification and sinking of organic particles at the sediment.

Depth (m)	Mean N_2O (nmol L^{-1})	Std dev (nmol L^{-1})	Mean O_2 (umol L^{-1})	Std dev (umol L^{-1})	NO_3^- umol L^{-1})
0	14.79	0.55	295.12	2.51	1.18
5	15.08	0.24	296.76	0.07	0.81
10	16.28	0.10	295.75	0.18	2.08
15	18.41	0.81	289.44	1.26	4.20
20	19.51	0.72	247.90	2.03	6.82
22	17.00	1.39	204.59	1.17	4.51
0	14.80	1.37	279.79	0.59	1.48
5	15.33	0.26	299.73	0.40	1.21
10	13.97	5.24	296.71	0.17	1.91
15	18.03	0.20	292.09	1.00	5.43
20	19.57	0.68	251.33	1.93	8.89
22	15.59	1.61	182.49	2.02	7.88
0	15.05	1.05	247.53	0.59	1.76
5	15.53	0.68	289.56	0.40	1.12
10	14.07	2.08	289.56	0.18	1.91
15	15.04	1.04	288.31	0.11	3.01
21	18.90	1.43	211.32	3.59	5.95
0	14.24	1.32	295.43	1.55	1.76
5	14.70	1.24	208.63	0.41	1.82
10	13.42	0.91	287.68	0.72	1.80
15	15.17	0.56	288.28	0.07	3.42
21	15.90	0.51	212.01	2.95	5.61
0	13.42	0.63	288.45	1.03	1.35
5	13.53	0.40	284.67	0.50	1.03
10	14.27	0.33	283.31	0.18	1.25
15	15.65	0.33	281.79	0.10	2.69
19	14.78	0.32	257.66	0.23	3.21

Table 3: SEA-EU cruise EBG and MBG N_2O, O_2 and NO_3^- mean concentrations and standard deviations. **NOTE:** the first two rows represent Eckernförde Bay and the last three rows represent Mecklenburg Bay.

6.4 N_2O saturation

Dissolved N_2O can be either saturated, undersaturated, or supersaturated in the study area. The N_2O saturation data recorded in this study area (Boknis Eck and the SEA-EU cruise) provide information on possible sources, accumulation, and sinks of N_2O. Saturation data are considered to be in equilibrium when the value in seawater is 100%, while undersaturation has a value less than 100% and supersaturation has a value greater than 100%. More than 99.90% of the

recorded data for the two measurements campaigns (Boknis Eck and SEA-EU cruise) are oversaturated in line with N_2O concentrations, and the saturation increases with increasing measured N_2O concentration. N_2O saturation at Boknis Eck is highly oversaturated with highest value of 355% (figure 14), with few data points being undersaturated with lowest value of 50% and mean value of 155%, while N_2O saturation during the cruise transect were highly oversaturated with highest value of 594% (figure 14), with three data points being undersaturated with values of 94 and 97% and mean value of 166% which is contrary with some past studies that have found undersaturation of N_2O in surface waters of the Southern Ocean (Zahn et al., 2015; Chen et al., 2014; Rees et al., 1997), although (Zahn et al., 2017) found supersaturation in surface waters. However, Zahn et al., (2015) stated that undersaturation of water at the surface led to dilutionof N_2O by melting sea ice, while Zhan and Chen (2009) linked it to the influence of stratification brought on by sea ice melting. We observed highest N_2O saturation at latitude 54.6°S between 78-87m, while the lowest was observed at latitude 54.7°S between 18-34m. In addition, stratification in the Southern Ocean has been seen to impede the circulation of gases between surface and deep waters throughout the summer (Chen et al., 2014; Gibson and Trull, 1999; Smith and Dong, 1984). Our data for both surface to water column measurements for N_2O saturation were plotted against temperature and salinity as shown in (figures 15 & 16), although previous studies have recorded significant relationships between N_2O saturation, temperature and salinity in the Antarctic ocean as a result of melting sea ice in the summer season (Zhan et al., 2015b; Zhan and Chen 2009). However, we recorded r^2 values 0.1436 and 0.0689 and there is no relationship between N_2O saturation and temperature for the both cruises. The relationship between N_2O saturation and salinity were almost similar to temperature (figure 16), although the correlation decreased in the Boknis Eck time series station and increased in the SEA EU cruise (r^2= 0.0364 and 0.1799) respectively. Therefore, temperature and salinity have no significant effect on the N_2O saturation in these study areas.

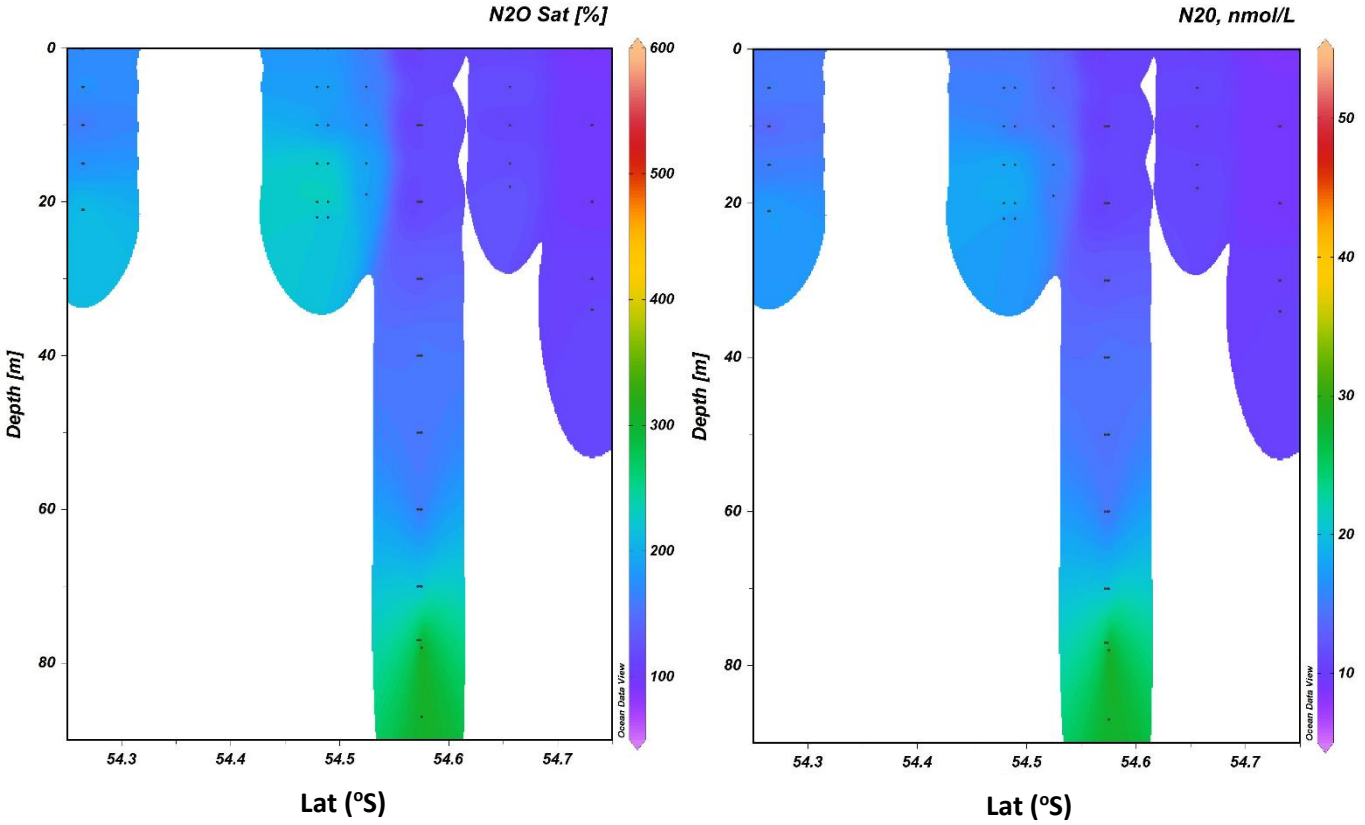
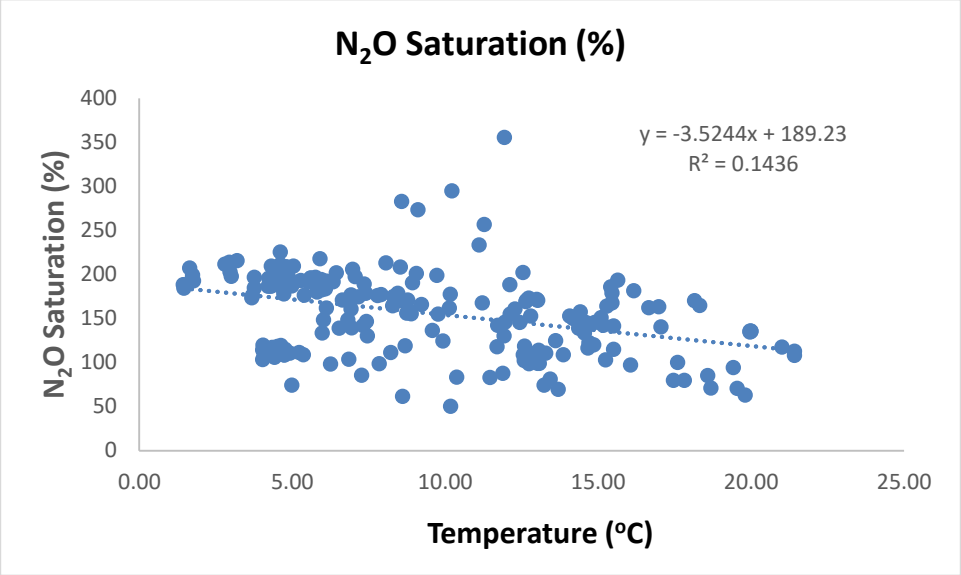


Figure 14: Distribution pattern of N_2O saturation and N_2O concentration during the cruise transect of SEA-EU at Arkona Basin, Gulf of Gdansk, Eckernförde Bay, and Mecklenburg Bay. **NOTE**: More than 90.90% of the observed data are undersaturated.

Boknis Eck



SEA-EU cruise

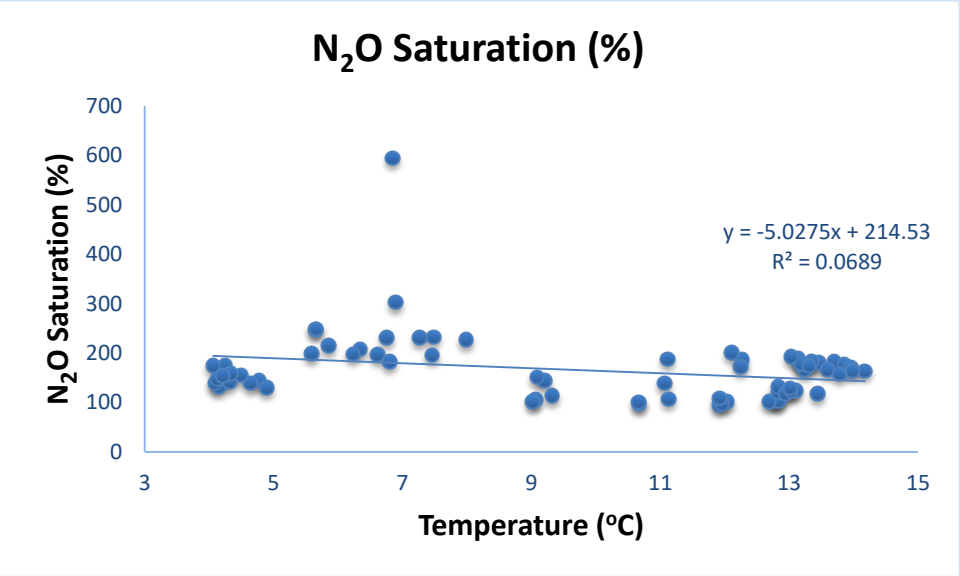
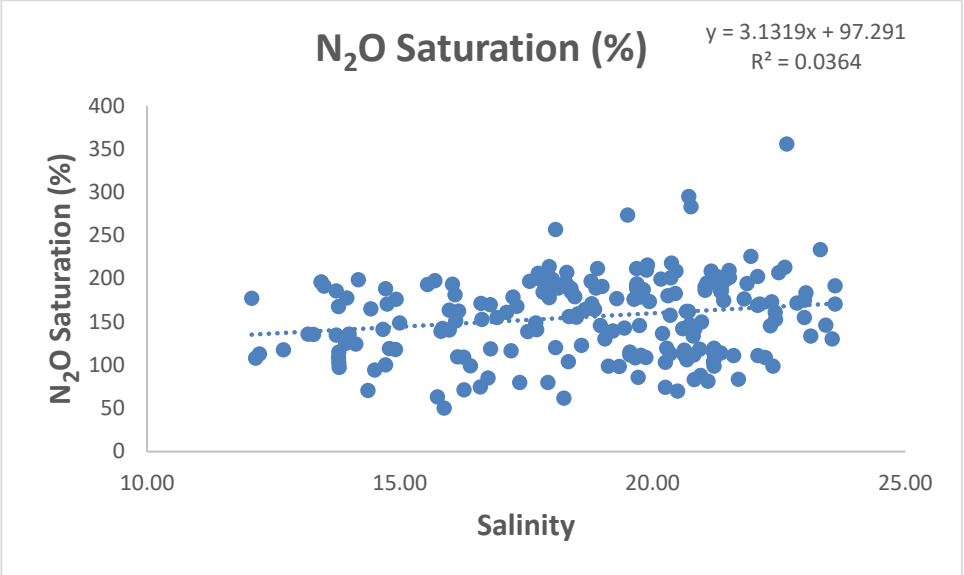


Figure 15: Correlation between N_2O saturation and temperature at Boknis Eck time series within year 2019 to 2022 and cruise transect in May 2022.

Boknis Eck



SEA-EU cruise

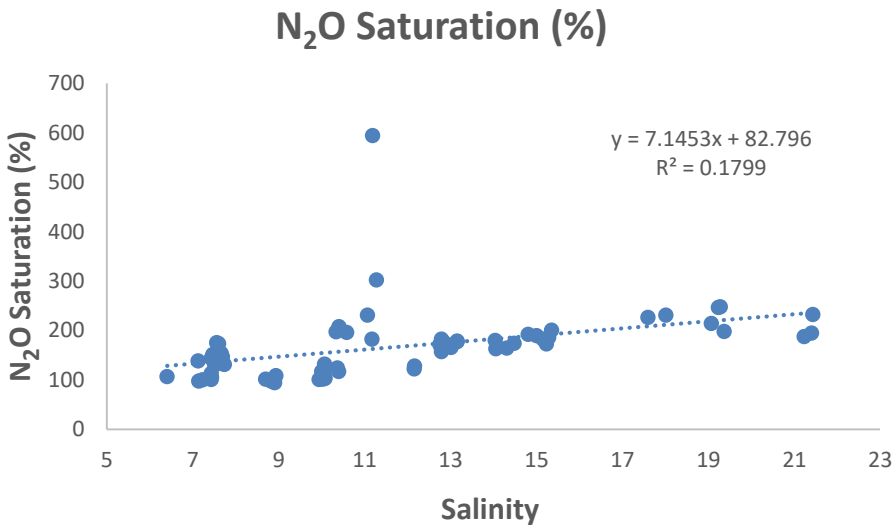


Figure 16: Correlation between N_2O saturation and salinity at Boknis Eck time series within year 2019 to 2022 and cruise transect in May 2022.

6.5 N_2O production

Due to the strong assumption that denitrification is inhibited by high ambient dissolved oxygen (DO) concentrations and nitrification is inhibited by light (Horrigan et al., 1981; Olson, 1981), research on biological N_2O formation in the area known as euphotic has been less significant. However, recent reports of active nitrification and N_2O generation in sunlit oceans around the world (Ji and Ward, 2017; Shiozaki et al., 2016; Wan et al., 2018) highlight the need to examine the source of N_2O in the euphotic zone.

The source of N_2O in the ocean is frequently investigated using a linear regression analysis between N_2O, AOU, and NO_3^- (Wan et al., 2022). According to numerous studies (Cohen and Gordon, 1979; de la Paz et al., 2017; De Wilde and Helder, 1997; Freing et al., 2009; Nevison et al., 1995, 2003; Tseng et al., 2016; Walter et al., 2006; Yoshinari, 1976), there is a significant positive linear correlation between N_2O and AOU away from oxygen minimum zones. This correlation is typically seen as proof that N_2O is produced through nitrification, an essential aerobic process that changes NH_4^+ to NO_3^- (Wan et al., 2022). However, regarding with these studies, significant correlation was not observed in our study between ΔN_2O /AOU in the Eckernförde Bay and the correlation increases in the cruise transect and the r^2 values of 0.008 and 0.3948 for the both cruises (figure 18), although not totally in agreement with the paper published by Rees et al., (1997) where they recorded a significant relationship between ΔN_2O /AOU in the Southern Ocean whereas our data in Eckernförde Bay are not in agreement with the paper published by Rees et al., (1997). Therefore, we suggest that nitrification may not be major N_2O production mechanism in Eckernförde Bay though our data in the cruise transect show that nitrification contributed in the N_2O production. However, the main N_2O production mechanism is either nitrification or denitrification process, although our data were collected not in a very deep water. The maximum depth in our study is 87 m at the Gulf of Gdansk and these studies shows results beyond 100m.

The horizontal and vertical variations in ΔN_2O /AOU have been explained by a number of theories, including variations in N_2O production mechanisms (De Wilde and Helder, 1997; Law and Owens, 1990), the effects of mixing and circulation (de la Paz et al., 2017; Nevison et al., 2003), changing N_2O results during nitrification at various ambient dissolved oxygen (DO) concentrations (Capelle et al., 2018; Nevison et al., 2003) and the possible impact of pressure and temperature on N_2O emission (Freing et al., 2009; Walter et al., 2006). Most microbial metabolisms accelerate with temperature, therefore both N_2O

formation and O_2 utilization are temperature-dependent (Nevison et al., 2003). However, it is questionable how temperature affects ΔN_2O /AOU overall. It is suggested that the overall reduction in temperature with depth causes a decrease in N_2O production and O_2 utilization however not for the ΔN_2O /AOU ratio considering both of these processes are influenced by the aerobic organic remineralization process when the ambient DO is adequate (Freing et al., 2009; Walter et al., 2006).

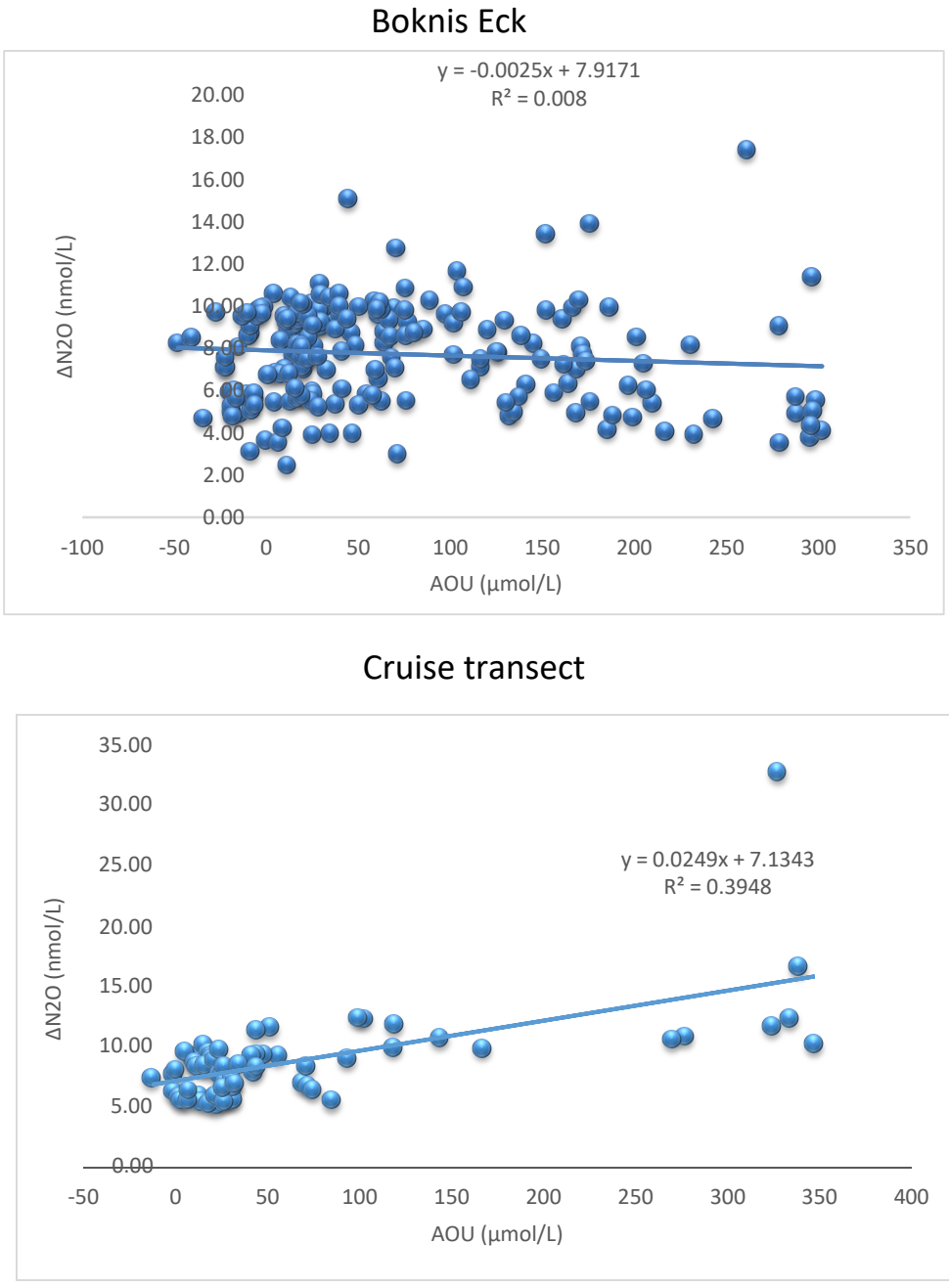


Figure 18: Relationship between Δ N_2O and AOU at Boknis Eck time series between year 2019 to 2022 and the SEA-EU cruise transect in May 2022.

7.0 Conclusion

In order to determine temporal and spatial variability of dissolved N_2O. N_2O concentrations were measured with the static head- space method for the both cruises (Boknis Eck time series and SEA-EU cruise transect) between year 2019 to 2023 for the Boknis Eck time series and May 2022 for SEA-EU cruise transect. Our measurements showed almost homogeneous N_2O concentrations at winter period throughout the water column for all the years and in summer the concentration changed at surface with lower N_2O concentrations and higher concentrations at the bottom at Boknis Eck time series this could be as a result of stratification of the water column.

In 2018, there was a pronounced heatwave that increased water temperature in the Baltic and North Seas. This was assumed to improve the N_2O production through denitrification by sinking of organic particles. However, we found no significant relationship between water temperature and excess N_2O in both surface and water column at Boknis Eck.

The N_2O saturation for the both cruises were oversaturated in the surface layer and in the water column. We found no significant relationship between temperature, salinity and N_2O saturation.

There is no clear relationship between excess N_2O and apparent oxygen utilization at Boknis Eck time series, though we found slight relationship between excess N_2O and apparent oxygen utilization at SEA-EU cruise transect which is in partial agreement with the paper published by Rees et al., (1997) in Southern Ocean.

Therefore, we suggest that nitrification may not be a major N_2O production mechanism in Eckernförde Bay though our data in the cruise transect show that nitrification contributed in the N_2O production. However, the main N_2O production mechanism could be nitrification or denitrification process.

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10.0 Declaration

I, Nwafor Chukwudi Ejikeme, hereby declare that I have written this thesis solely on the advice of my supervisor and that I have fully acknowledged all sources and aids used. The submitted written version of this thesis corresponds to the one on the electronic storage medium. I furthermore assure that neither this nor a similar thesis has already been submitted elsewhere for the purpose of obtaining a Master's degree.

Kiel, ……

Signature…….

11.0 Appendix

Cruise No	Depth (m)	Latitude	Longitude	Date	Time	Mean N_2O[nmol/L-1]	Temp (°C)	Salinty	Oxygen (µmol L^{-1})	NO_2^- (µmol L^{-1})	NO_3^- (µmol L^{-1})	AOU (µmol L^{-1})	ΔN_20 (nmol L^{-1})	N_2O Sat (%)
372	1	54°31.77 N	10°02.36 E	28.07.2005	08:58	9.494252218	18.19	13.72	281.4	0.01	0.09			
372	5	54°31.77 N	10°02.36 E	28.07.2005	08:58	9.180039244	17.98	14.14	285.1	0.01	0.04			
372	10	54°31.77 N	10°02.36 E	28.07.2005	08:58	10.52925082	17.38	16.63	231.2	0.02	0.05			
372	15	54°31.77 N	10°02.36 E	28.07.2005	08:58	14.24864399	10.6	21.78	130	0.3	2.32			
372	20	54°31.77 N	10°02.36 E	28.07.2005	08:58	15.77936652	8.41	24.49	85.1	0.21	6.5			
372	25	54°31.77 N	10°02.36 E	28.07.2005	08:58	18.51136897	7.7	24.72	31.5	0.14	10.77			
373	1	54°31.77 N	10°02.36 E	11.08.2005	08:42	9.539075248	16.71	15.47	274	0	0.75			
373	5	54°31.77 N	10°02.36 E	11.08.2005	08:42	9.475144542	16.7	15.48	275.1	0	0.24			
373	10	54°31.77 N	10°02.36 E	11.08.2005	08:42	9.859040041	16.81	16.51	259	0.04	0.08			
373	15	54°31.77 N	10°02.36 E	11.08.2005	08:42	12.60217162	13.34	21.28	151	0.01	0.02			
373	20	54°31.77 N	10°02.36 E	11.08.2005	08:42	16.95021409	9.44	23.67	56.7	0.27	5.7			
373	25	54°31.77 N	10°02.36 E	11.08.2005	08:42	18.10535082	8.13	24.54	16.3	0.21	12.2			
374	1	54°31.77 N	10°02.36 E	14.09.2005	10:38	10.09047869	17.22	14.97	284.2	0.03	0.06			
374	5	54°31.77 N	10°02.36 E	14.09.2005	10:38	10.17762305	17.32	15.27	281	0.02	0.01			

374	10	54°31.77 N	10°02.36 E	14.09.2005	10:38	10.18501968	17.68	16.51	273.6	0.02	0
374	15	54°31.77 N	10°02.36 E	14.09.2005	10:38	9.812620781	16.9	17.97	214.5	0.03	0.06
374	20	54°31.77 N	10°02.36 E	14.09.2005	10:38	9.98544085	14.22	20.92	86.1	0.06	0.09
374	25	54°31.77 N	10°02.36 E	14.09.2005	10:38	1.743822729	10.95	23.25	0	0.17	0.17
375	1	54°31.77 N	10°02.36 E	26.10.2005	08:52	10.83624151	13.38	16.7	268.2	0.03	0.07
375	5	54°31.77 N	10°02.36 E	26.10.2005	08:52	10.74295731	13.38	16.72	269.3	0.03	0.02
375	10	54°31.77 N	10°02.36 E	26.10.2005	08:52	10.69516606	13.9	17.4	254.8	0.02	0.05
375	15	54°31.77 N	10°02.36 E	26.10.2005	08:52	9.296025063	14.38	18.13	158.4	0.02	0.06
375	20	54°31.77 N	10°02.36 E	26.10.2005	08:52	7.0486763	14.39	19.73	70	0.06	0.12
375	25	54°31.77 N	10°02.36 E	26.10.2005	08:52	1.198048132	12.43	22.32	0	0.52	0.53
376	1	54°31.77 N	10°02.36 E	15.11.2005	09:57	17.07351997	11.7	20.08	234.4	0.25	2.65
376	5	54°31.77 N	10°02.36 E	15.11.2005	09:57	16.44709709	11.69	20.22	237.1	0.25	2.63
376	10	54°31.77 N	10°02.36 E	15.11.2005	09:57	18.13677285	11.91	21.21	220.5	0.24	2.9
376	15	54°31.77 N	10°02.36 E	15.11.2005	09:57	19.38578864	12.21	22.36	180.2	0.25	3.51
376	20	54°31.77 N	10°02.36 E	15.11.2005	09:57	19.5720606	12.24	23.7	163.2	0.26	3.9
376	25	54°31.77 N	10°02.36 E	15.11.2005	09:57	18.50418005	12.15	24.34	178.2	0.3	5.19
377	1	54°31.77 N	10°02.36 E	13.12.2005	10:41	13.46629639	5.68	17.91	349.6	0.14	1.06
377	5	54°31.77 N	10°02.36 E	13.12.2005	10:41	13.5264712	6.17	19.51	345.9	0.1	1.07
377	10	54°31.77 N	10°02.36 E	13.12.2005	10:41	13.01183522	6.73	20.64	328.7	0.11	1.8

377	15	54°31.77 N	10°02.36 E	13.12.2005	10:41	13.17499367	6.84	20.91	324.6	0.13	2.06
377	20	54°31.77 N	10°02.36 E	13.12.2005	10:41	12.70767633	7.67	22.22	274	0.23	2.96
377	25	54°31.77 N	10°02.36 E	13.12.2005	10:41	11.74672244	9.87	25.03	146.1	0.57	3.16
378	1	54°31.77 N	10°02.36 E	17.01.2006	10:27	15.27896988	2.41	19.89	367	0.49	4.12
378	5	54°31.77 N	10°02.36 E	17.01.2006	10:27	14.38965144	2.42	19.91	368.5	0.27	3.62
378	10	54°31.77 N	10°02.36 E	17.01.2006	10:27	14.55291329	2.7	20	356.9	0.2	3.15
378	15	54°31.77 N	10°02.36 E	17.01.2006	10:27	15.01496875	3.73	20.59	336.9	0.18	2.87
378	20	54°31.77 N	10°02.36 E	17.01.2006	10:27	14.83245064	4.48	21.1	284.3	0.17	2.76
378	25	54°31.77 N	10°02.36 E	17.01.2006	10:27	14.80079667	6.65	22.05	195.2	0.17	2.85
379	1	54°31.77 N	10°02.36 E	14.02.2006	10:31	16.18607811	1.12	16.53	436.2	0.09	0.03
379	5	54°31.77 N	10°02.36 E	14.02.2006	10:31	16.36247471	1.42	16.72	431	0.08	0.11
379	10	54°31.77 N	10°02.36 E	14.02.2006	10:31	15.76700862	1.56	17.25	402.5	0.17	1.55
379	15	54°31.77 N	10°02.36 E	14.02.2006	10:31	16.01300952	1.79	18.4	376.6	0.32	3.41
379	20	54°31.77 N	10°02.36 E	14.02.2006	10:31	16.18945787	2.2	19.28	341	0.35	3.92
379	25	54°31.77 N	10°02.36 E	14.02.2006	10:31	16.17732474	2.57	19.79	293.3	0.49	4.32
380	1	54°31.77 N	10°02.36 E	14.03.2006	11:17	15.47476315	1.07	17.29	397.7	0.03	0.1
380	5	54°31.77 N	10°02.36 E	14.03.2006	11:17	15.9835144	1.1	17.36	399.3	0.02	0.05
380	10	54°31.77 N	10°02.36 E	14.03.2006	11:17	15.82231899	1.32	17.72	386.1	0.02	0.07

380	15	54°31.77 N	10°02.36 E	14.03.2006	11:17	16.0087845	1.36	17.83	382	0.03	0.08
380	20	54°31.77 N	10°02.36 E	14.03.2006	11:17	16.03272507	1.23	17.85	360.5	0.04	0.11
380	25	54°31.77 N	10°02.36 E	14.03.2006	11:17	16.02073938	2.22	19.02	276	0.14	1.69
381	1	54°31.77 N	10°02.36 E	21.04.2006	11:02	14.7864616	5.56	16.57	375.3	0.02	0.06
381	5	54°31.77 N	10°02.36 E	21.04.2006	11:02	14.22854821	4.82	16.97	372.5	0.03	0.02
381	10	54°31.77 N	10°02.36 E	21.04.2006	11:02	14.1167887	3.42	19.84	315.7	0.1	0.97
381	15	54°31.77 N	10°02.36 E	21.04.2006	11:02	14.93382853	4.1	22.2	315.1	0.05	1.25
381	20	54°31.77 N	10°02.36 E	21.04.2006	11:02	12.91070342	4.41	24.05	296.8	0.05	2.02
381	25	54°31.77 N	10°02.36 E	21.04.2006	11:02	12.31005833	4.15	25.9	212.7	0.12	3.07
382	1	54°31.77 N	10°02.36 E	17.05.2006	10:26	12.36454144	12.15	12.65	325.4	0.06	0.06
382	5	54°31.77 N	10°02.36 E	17.05.2006	10:26	12.64491736	11.76	14.19	331	0.06	0.04
382	10	54°31.77 N	10°02.36 E	17.05.2006	10:26	13.01238589	10.31	16.96	353.6	0.05	0.02
382	15	54°31.77 N	10°02.36 E	17.05.2006	10:26	13.07541063	9.15	17.16	335.4	0.03	0.05
382	20	54°31.77 N	10°02.36 E	17.05.2006	10:26	14.67779231	5.89	20.27	237.6	0.19	1.8
382	25	54°31.77 N	10°02.36 E	17.05.2006	10:26	10.11170759	4.32	25.44	73.5	0.16	1.84
383	1	54°31.77 N	10°02.36 E	21.06.2006	11:19		17.19	16.36	299.7	0.07	0.02
383	5	54°31.77 N	10°02.36 E	21.06.2006	11:19	11.15315754	17.18	16.38	301	0.07	0.02
383	10	54°31.77 N	10°02.36 E	21.06.2006	11:19	11.13800384	13.52	17.95	299.1	0.07	0.02
383	15	54°31.77 N	10°02.36 E	21.06.2006	11:19	12.91267362	10.53	21.33	313.2	0.04	0

383	20	54°31.77 N	10°02.36 E	21.06.2006	11:19	12.88608374	6.12	23.87	165.5	0.12	0
383	25	54°31.77 N	10°02.36 E	21.06.2006	11:19	14.14857975	7.4	25.44	154.9	0.22	0.63
384	1	54°31.77 N	10°02.36 E	27.07.2006	11:19		23.2	12.5	282.2	0.04	0.02
384	5	54°31.77 N	10°02.36 E	27.07.2006	11:19	12.85766345	22.9	12.6	289.5	0.11	0.06
384	10	54°31.77 N	10°02.36 E	27.07.2006	11:19	15.27866443	16.5	17.6	274.2	0.44	0.38
384	15	54°31.77 N	10°02.36 E	27.07.2006	11:19	17.78939957	10.2	21.8	199.6	0.27	0.21
384	20	54°31.77 N	10°02.36 E	27.07.2006	11:19	20.28328856	8	24	142	0.55	1.18
384	25	54°31.77 N	10°02.36 E	27.07.2006	11:19	21.5208856	8	24	94	0.24	3.31
385	1	54°31.77 N	10°02.36 E	17.08.2006	08:59	12.93401758	17.9	16.85	257	0.11	0.13
385	5	54°31.77 N	10°02.36 E	17.08.2006	08:59	13.68994295	17.8	17.05	267.8	0.07	0.02
385	10	54°31.77 N	10°02.36 E	17.08.2006	08:59	15.47575611	16.11	18.78	194.8	0.1	0.08
385	15	54°31.77 N	10°02.36 E	17.08.2006	08:59	17.24244356	13.05	21.34	143.5	0.16	0.36
385	20	54°31.77 N	10°02.36 E	17.08.2006	08:59	17.08507651	9.93	23.82	128.7	0.16	0.48
385	25	54°31.77 N	10°02.36 E	17.08.2006	08:59	20.88532373	9.05	24.3	63.6	0.62	2.53
386	1	54°31.77 N	10°02.36 E	20.09.2006			16.81	20.08	259.1	0.05	0.08
386	5	54°31.77 N	10°02.36 E	20.09.2006			16.74	20.6	254.2	0.05	0.07
386	10	54°31.77 N	10°02.36 E	20.09.2006			16.52	21.26	246.5	0.04	0.01
386	15	54°31.77 N	10°02.36 E	20.09.2006		9.846644493	16.31	21.65	234.2	0.04	0.02
386	20	54°31.77 N	10°02.36 E	20.09.2006		4.578681618	11.46	24.47	21.8	0.11	0.03

386	25	54°31.77 N	10°02.36 E	20.09.2006		4.578138936	11.05	24.88	6	0.27	0.17
387	1	54°31.77 N	10°02.36 E	11.10.2006	09:11		15.63	20.14			
387	5	54°31.77 N	10°02.36 E	11.10.2006	09:11		15.6	20.13			
387	10	54°31.77 N	10°02.36 E	11.10.2006	09:11		15.61	20.26			
387	15	54°31.77 N	10°02.36 E	11.10.2006	09:11		15.41	21.05			
387	20	54°31.77 N	10°02.36 E	11.10.2006	09:11		13.87	23.17			
387	25	54°31.77 N	10°02.36 E	11.10.2006	09:11		12.38	23.81			
388	1	54°31.77 N	10°02.36 E	14.11.2006	10:14	15.25931337	10.57	20.51	305.1	0.76	2.05
388	5	54°31.77 N	10°02.36 E	14.11.2006	10:14	15.83545923	10.58	20.53	305	0.75	2
388	10	54°31.77 N	10°02.36 E	14.11.2006	10:14	15.13903879	10.58	20.53	292.1	0.75	2.04
388	15	54°31.77 N	10°02.36 E	14.11.2006	10:14	15.82413649	10.6	20.55	296.4	0.76	2.01
388	20	54°31.77 N	10°02.36 E	14.11.2006	10:14		11.03	21.06	228.2	0.67	3.84
388	25	54°31.77 N	10°02.36 E	14.11.2006	10:14	15.19482773	13	22.73	57	0.56	13.76
389	1	54°31.77 N	10°02.36 E	12.12.2006	08:28	18.26228714	8.49	22.46	303.3	0.44	3.36
389	5	54°31.77 N	10°02.36 E	12.12.2006	08:28	17.48486605	8.49	22.47	307	0.41	3.24
389	10	54°31.77 N	10°02.36 E	12.12.2006	08:28	18.06880261	8.59	22.59	300.9	0.57	4.06
389	15	54°31.77 N	10°02.36 E	12.12.2006	08:28	17.67983299	8.64	22.64	297.9	0.61	4.36
389	20	54°31.77 N	10°02.36 E	12.12.2006	08:28	18	8.91	22.91	293.3	0.75	5.13

389	25	54°31.77 N	10°02.36 E	12.12.2006	08:28	17.0953936	8.98	23	284.5	0.82	5.47
390	1	54°31.77 N	10°02.36 E	22.02.2007		16.31838949	3.93	18.42		0.75	9.64
390	5	54°31.77 N	10°02.36 E	22.02.2007		17.09221723	3.86	19.59		0.79	9.63
390	10	54°31.77 N	10°02.36 E	22.02.2007		17.50470614	3.83	19.81		0.81	10.2
390	15	54°31.77 N	10°02.36 E	22.02.2007		17.03622287	3.83	20.85		0.85	11.42
390	20	54°31.77 N	10°02.36 E	22.02.2007		16.94548613	3.9	21.27		0.88	11.68
390	25	54°31.77 N	10°02.36 E	22.02.2007			3.92	21.36		0.9	11.34
391	1	54°31.77 N	10°02.36 E	15.03.2007	10:31	18.42502276	5.19	13.16	445.6	0.09	0.01
391	5	54°31.77 N	10°02.36 E	15.03.2007	10:31	17.80896984	5.16	13.31	452.5	0.07	0.01
391	10	54°31.77 N	10°02.36 E	15.03.2007	10:31	17.32377074	4.41	15	395	0.34	4.23
391	15	54°31.77 N	10°02.36 E	15.03.2007	10:31	17.79833849	3.97	16.43	362.5	0.63	8.08
391	20	54°31.77 N	10°02.36 E	15.03.2007	10:31	17.41699861	3.78	18.02	342.7	0.94	10.85
391	25	54°31.77 N	10°02.36 E	15.03.2007	10:31	17.28655104	3.89	19.08	293.6	1.05	12.3
392	1	54°31.77 N	10°02.36 E	05.04.2007	10:23	15.83604483	6.8	15.5	343.5	0.05	0.32
392	5	54°31.77 N	10°02.36 E	05.04.2007	10:23	16.04270856	6.81	15.56	343.1	0.04	0.27
392	10	54°31.77 N	10°02.36 E	05.04.2007	10:23	16.65681763	6.78	15.51	342.5	0.04	0.19
392	15	54°31.77 N	10°02.36 E	05.04.2007	10:23	16.12896281	6.65	15.56	342.4	0.04	0.12
392	20	54°31.77 N	10°02.36 E	05.04.2007	10:23	17.92129735	4.74	19.73	300	0.27	6.97

392	25	54°31.77 N	10°02.36 E	05.04.2007	10:23	22.59599996	4.97	21.06	291	0.17	4.54
393	1	54°31.77 N	10°02.36 E	04.05.2007		14.90714954	10.86	15.61	304.7	0.02	0.01
393	5	54°31.77 N	10°02.36 E	04.05.2007		17.0843744	10.85	15.62	300.8	0.02	0.02
393	10	54°31.77 N	10°02.36 E	04.05.2007		18.46549089	10.05	15.94	216.7	0.04	0.19
393	15	54°31.77 N	10°02.36 E	04.05.2007		17.85860838	7.76	17.32	137.5	0.12	2.11
393	20	54°31.77 N	10°02.36 E	04.05.2007		21.02513026	5.81	19.56	90.3	0.16	6.19
393	25	54°31.77 N	10°02.36 E	04.05.2007		18.53142369	5.32	20.31	87	0.16	6.25
395	1	54°31.77 N	10°02.36 E	14.06.2007	11:10	17.00096234	18.36	15.28	290.2	0.13	0.1
395	5	54°31.77 N	10°02.36 E	14.06.2007	11:10	17.37611963	18.3	15.26	288.8	0.17	0.03
395	10	54°31.77 N	10°02.36 E	14.06.2007	11:10	15.220553	15.55	15.29	314.4	0.01	0.03
395	15	54°31.77 N	10°02.36 E	14.06.2007	11:10	17.45448352	13.91	16.06	277.2	0.03	0.09
395	20	54°31.77 N	10°02.36 E	14.06.2007	11:10	16.43049164	9.14	17.41	154.3	0.29	0.57
395	25	54°31.77 N	10°02.36 E	14.06.2007	11:10	21.34585532	5.87	19.66	21.4	0.26	3.1
396	1	54°31.77 N	10°02.36 E	12.07.2007				14.4	316.5	0.12	0.11
396	5	54°31.77 N	10°02.36 E	12.07.2007				14.5	306.7	0.12	0.02
396	10	54°31.77 N	10°02.36 E	12.07.2007				16.3	199.8	0.13	0.33
396	15	54°31.77 N	10°02.36 E	12.07.2007				18.3	150.9	0.25	4.42
396	20	54°31.77 N	10°02.36 E	12.07.2007				19.5	133.5	0.57	7.26
396	25	54°31.77 N	10°02.36 E	12.07.2007				19.7	87.6	0.21	7.74

397	1	54°31.77 N	10°02.36 E	16.08.2007	10:43	14.30111632	17.8	16.78	242	0.07	0.06
397	5	54°31.77 N	10°02.36 E	16.08.2007	10:43	14.3	17.39	17.1	237	0.07	0.01
397	10	54°31.77 N	10°02.36 E	16.08.2007	10:43		14.26	19.76	134	0.16	0.34
397	15	54°31.77 N	10°02.36 E	16.08.2007	10:43	14.3	13.43	20.62	109.1	0.26	2.01
397	20	54°31.77 N	10°02.36 E	16.08.2007	10:43	15.54	13.16	21.12	84.7	0.28	4.44
397	25	54°31.77 N	10°02.36 E	16.08.2007	10:43	15.8	12.78	21.41	62.8	0.21	6.44
398	1	54°31.77 N	10°02.36 E	12.09.2007	08:53		16.04	15.66	279.1	0.09	0.03
398	5	54°31.77 N	10°02.36 E	12.09.2007	08:53		16.04	15.72	286.2	0.08	0.01
398	10	54°31.77 N	10°02.36 E	12.09.2007	08:53		16.02	15.79	277.1	0.09	0.08
398	15	54°31.77 N	10°02.36 E	12.09.2007	08:53		16	16.01	264	0.07	0.14
398	20	54°31.77 N	10°02.36 E	12.09.2007	08:53		13.77	19.92	13.7	0.08	0.24
398	25	54°31.77 N	10°02.36 E	12.09.2007	08:53		12.49	20.98	0	0.13	0.51
399	1	54°31.77 N	10°02.36 E	16.10.2007	08:48	11.54255334	13.12	17.78	281.9	0.01	0.31
399	5	54°31.77 N	10°02.36 E	16.10.2007	08:48	12.0064652	13.12	17.81	285.2	0.01	0.11
399	10	54°31.77 N	10°02.36 E	16.10.2007	08:48	14.5401846	13.13	17.84	281.5	0.01	0.05
399	15	54°31.77 N	10°02.36 E	16.10.2007	08:48	13.56183627	13.68	18.63	234.4	0.06	0.04
399	20	54°31.77 N	10°02.36 E	16.10.2007	08:48	12.14973018	13.9	19.83	119.8	0.5	3.26
399	25	54°31.77 N	10°02.36 E	16.10.2007	08:48	13.48214939	13.8	20.55	94.4	0.4	5.39
400	1	54°31.77 N	10°02.36 E	13.11.2007	09:26	19.94042238	8.86	16.69	317.8	0.08	0.08

400	5	54°31.77 N	10°02.36 E	13.11.2007	09:26	21.42064733	8.88	16.72	317.3	0.07	0
400	10	54°31.77 N	10°02.36 E	13.11.2007	09:26	17.90910847	9.19	16.87	311.2	0.1	0.14
400	15	54°31.77 N	10°02.36 E	13.11.2007	09:26	20.19276951	9.97	17.37	290.3	0.21	0.97
400	20	54°31.77 N	10°02.36 E	13.11.2007	09:26	15.87519919	10.86	18.02	235	0.18	4.53
400	25	54°31.77 N	10°02.36 E	13.11.2007	09:26	18.33265491	12.98	19.27	70	0.27	11.71
401	1	54°31.77 N	10°02.36 E	11.12.2007	09:35	16.65097384	6.82	17.98	323.9	0.81	2.495
401	5	54°31.77 N	10°02.36 E	11.12.2007	09:35	17.6390138	6.81	18	323.5	0.915	2.475
401	10	54°31.77 N	10°02.36 E	11.12.2007	09:35	17.53418266	6.84	18.04	323.6	0.94	2.535
401	15	54°31.77 N	10°02.36 E	11.12.2007	09:35	18.22988105	7	18.24	318.6	0.615	2.755
401	20	54°31.77 N	10°02.36 E	11.12.2007	09:35	18.44027304	7.21	18.5	298.8	0.76	4.36
401	25	54°31.77 N	10°02.36 E	11.12.2007	09:35	17.76912871	7.71	18.97	254.1	0.655	4.575
402	1	54°31.77 N	10°02.36 E	17.01.2008	09:30	21.10437716	4.44	17.85	349	0.565	5.94
402	5	54°31.77 N	10°02.36 E	17.01.2008	09:30	17.70869478	4.45	17.87	350.4	0.59	5.845
402	10	54°31.77 N	10°02.36 E	17.01.2008	09:30	18.44440754	4.45	17.9	348.9	0.615	5.665
402	15	54°31.77 N	10°02.36 E	17.01.2008	09:30	18.29796925	4.44	17.9	349.7	0.635	5.655
402	20	54°31.77 N	10°02.36 E	17.01.2008	09:30	19.26809304	4.44	17.9	347.6	0.655	5.56
402	25	54°31.77 N	10°02.36 E	17.01.2008	09:30	19.1	4.44	17.9	348.3	0.685	5.585
403	1	54°31.77 N	10°02.36 E	19.02.2008	09:25	15.51386802	3.52	17.39	379.9	0.23	2.91

403	5	54°31.77 N	10°02.36 E	19.02.2008	09:25	14.93472362	3.57	17.59	390.6	0.23	2.995
403	10	54°31.77 N	10°02.36 E	19.02.2008	09:25	14.26361607	3.77	18.7	388.8	0.25	4.745
403	15	54°31.77 N	10°02.36 E	19.02.2008	09:25	14.6904554	3.81	18.78	382.8	0.255	3.875
403	20	54°31.77 N	10°02.36 E	19.02.2008	09:25	15.05728083	5.04	22.76	313.3	0.49	7.015
403	25	54°31.77 N	10°02.36 E	19.02.2008	09:25	16.3	5.16	23.15	283.9	0.42	7.09
405	1	54°31.77 N	10°02.36 E	16.04.2008	11:48	16.95260845	6.94	11.34	360.5	0.03	0.1
405	5	54°31.77 N	10°02.36 E	16.04.2008	11:48	16.54252635	7.22	13.62	358.5	0.03	0.02
405	10	54°31.77 N	10°02.36 E	16.04.2008	11:48	17.2	6.38	17.15	358	0.05	0.03
405	15	54°31.77 N	10°02.36 E	16.04.2008	11:48	17.02122093	5.98	18.61	351.7	0.04	0.02
405	20	54°31.77 N	10°02.36 E	16.04.2008	11:48	17.6	5.36	19.78	339.3	0.04	0.06
405	25	54°31.77 N	10°02.36 E	16.04.2008	11:48	17.1	5.05	20.69	224.3	0.17	0.97
406	1	54°31.77 N	10°02.36 E	20.05.2008	10:37	14.62702752	13.74	11.47	317.3	0.01	0.03
406	5	54°31.77 N	10°02.36 E	20.05.2008	10:37	12.71246535	13.76	11.5	316.8	0.01	0
406	10	54°31.77 N	10°02.36 E	20.05.2008	10:37		13.59	11.5	318.5	0.01	0.02
406	15	54°31.77 N	10°02.36 E	20.05.2008	10:37	14.65663895	8.96	13.71	348	0.02	0.04
406	20	54°31.77 N	10°02.36 E	20.05.2008	10:37		5.88	19.56	246.6	0.25	1.02
406	25	54°31.77 N	10°02.36 E	20.05.2008	10:37	18.2	5.63	20.2	146.1	0.62	2.04
407	1	54°31.77 N	10°02.36 E	24.06.2008	10:35	11.60139141	15.42	12.4	292.2	0.07	0.01
407	5	54°31.77 N	10°02.36 E	24.06.2008	10:35	12.51768084	14.63	13.9	288.2	0.08	0.02

407	10	54°31.77 N	10°02.36 E	24.06.2008	10:35	14.8	13.48	16.97	273.1	0.07	0.03
407	15	54°31.77 N	10°02.36 E	24.06.2008	10:35	18.21479174	10.27	18.97	236.4	0.09	0.09
407	20	54°31.77 N	10°02.36 E	24.06.2008	10:35	21.5	8.41	20.85	183.8	0.2	3.19
407	25	54°31.77 N	10°02.36 E	24.06.2008	10:35	22	7.57	21.38	148.7	0.19	5.14
408	1	54°31.77 N	10°02.36 E	09.07.2008	09:35	10.28889506	15.06	17.35	277.3	0.06	0.14
408	5	54°31.77 N	10°02.36 E	09.07.2008	09:35	11.38075285	14.59	17.75	274	0.07	0.19
408	10	54°31.77 N	10°02.36 E	09.07.2008	09:35		11.3	20.59	223.5	0.04	0.29
408	15	54°31.77 N	10°02.36 E	09.07.2008	09:35	14.73407538	11.48	21.75	228.8	0.03	0.31
408	20	54°31.77 N	10°02.36 E	09.07.2008	09:35		10.38	22.93	174.7	0.03	0.59
408	25	54°31.77 N	10°02.36 E	09.07.2008	09:35	16.6	9.87	23.64	134.3	0.37	0.97
409	1	54°31.77 N	10°02.36 E	19.08.2008	15:44	13.54285313	17.74	16.12	278.2	0.05	0.13
409	5	54°31.77 N	10°02.36 E	19.08.2008	15:44	12.29869792	17.06	17.02	270.6	0.06	0.15
409	10	54°31.77 N	10°02.36 E	19.08.2008	15:44	16.6	15.37	19.19	227.9	0.07	0.25
409	15	54°31.77 N	10°02.36 E	19.08.2008	15:44	18.81722854	13.91	20.81	169.2	0.09	0.48
409	20	54°31.77 N	10°02.36 E	19.08.2008	15:44	17.7	11.47	22.79	98	0.11	0.99
409	25	54°31.77 N	10°02.36 E	19.08.2008	15:44	14.364007	10.98	23.39	26	0.13	2.32
410	1	54°31.77 N	10°02.36 E	15.09.2008	15:33		15.3	17.36	288.4	0.01	0.3
410	5	54°31.77 N	10°02.36 E	15.09.2008	15:33	8.3	15.28	18.2	280.3	0.01	0.33
410	10	54°31.77 N	10°02.36 E	15.09.2008	15:33		15.61	18.86	269.2	0.02	0.33

410	15	54°31.77 N	10°02.36 E	15.09.2008	15:33	10.1	15.48	19.11	269.2	0.05	0.31
410	20	54°31.77 N	10°02.36 E	15.09.2008	15:33		15.14	20.65	86.2	0.1	1.9
410	25	54°31.77 N	10°02.36 E	15.09.2008	15:33	9.333774	12.14	23.3	3.5	0.15	4.43
414	1	54°31.77 N	10°02.36 E	27.10.2008	12:45	11.47268226	12.31	21.23	255	0.51	2
414	5	54°31.77 N	10°02.36 E	27.10.2008	12:45	10.4	12.3	21.25	255.1	0.45	1.75
414	10	54°31.77 N	10°02.36 E	27.10.2008	12:45	9.8	12.45	21.98	235	0.64	2.58
414	15	54°31.77 N	10°02.36 E	27.10.2008	12:45	9.7	12.62	22.41	228.8	0.57	2.57
414	20	54°31.77 N	10°02.36 E	27.10.2008	12:45	10.2	12.69	23.6	225	0.22	1.88
414	25	54°31.77 N	10°02.36 E	27.10.2008	12:45		12.68	24.04	224.4	0.15	1.73
415	1	54°31.77 N	10°02.36 E	17.11.2008	10:14	10.93592991	9.59	20.7	310.7	0.67	2.17
415	5	54°31.77 N	10°02.36 E	17.11.2008	10:14	14.2	9.6	20.71	310.2	0.68	2.2
415	10	54°31.77 N	10°02.36 E	17.11.2008	10:14	12.5	9.79	20.85	307.4	0.71	2.3
415	15	54°31.77 N	10°02.36 E	17.11.2008	10:14	13	11.09	22.69	266.4	1.22	4.93
415	20	54°31.77 N	10°02.36 E	17.11.2008	10:14	12.6	11.73	23.87	224.6	1.53	6.69
415	25	54°31.77 N	10°02.36 E	17.11.2008	10:14	15.1015277	11.68	23.97	221.3	1.55	7.05
416	1	54°31.77 N	10°02.36 E	08.12.2008	10:46		6.56	20.54			
416	5	54°31.77 N	10°02.36 E	08.12.2008	10:46		6.56	20.61			
416	10	54°31.77 N	10°02.36 E	08.12.2008	10:46		6.58	20.72			
416	15	54°31.77 N	10°02.36 E	08.12.2008	10:46		6.76	20.9			

416	20	54°31.77 N	10°02.36 E	08.12.2008	10:46		8.61	21.84				
416	25	54°31.77 N	10°02.36 E	08.12.2008	10:46		9.65	22.58				
417	1	54°31.77 N	10°02.36 E	19.01.2009	10:25	11.46847	4.36	18.66	329.6	0.49	5.72	
417	5	54°31.77 N	10°02.36 E	19.01.2009	10:25	16.9	4.35	18.68	330.9	0.5	6.48	
417	10	54°31.77 N	10°02.36 E	19.01.2009	10:25	21.3	5.04	19.39	311.7	0.5	7.08	
417	15	54°31.77 N	10°02.36 E	19.01.2009	10:25	26.3	5.46	19.93	295.7	0.47	7.79	
417	20	54°31.77 N	10°02.36 E	19.01.2009	10:25	19.6	5.59	20.15	284.7	0.43	8.38	
417	25	54°31.77 N	10°02.36 E	19.01.2009	10:25		5.71	20.33	279.5	0.42	8.53	
418	1	54°31.77 N	10°02.36 E	10.02.2009	10:30	12.4297436	2.54	16.93	375.9	0.26	3.89	
418	5	54°31.77 N	10°02.36 E	10.02.2009	10:30	12.14720221	2.54	16.95	370.6	0.24	4	
418	10	54°31.77 N	10°02.36 E	10.02.2009	10:30		2.54	17.04	376.3	0.22	4.15	
418	15	54°31.77 N	10°02.36 E	10.02.2009	10:30		2.67	17.48	372.3	0.24	4.23	
418	20	54°31.77 N	10°02.36 E	10.02.2009	10:30		2.87	17.77	361.4	0.32	5.23	
418	25	54°31.77 N	10°02.36 E	10.02.2009	10:30		2.96	18.11	347	0.37	5.22	
419	1	54°31.77 N	10°02.36 E	02.03.2009	10:09	15.02022867	2.54	15.55	398.4	0.02	0.09	
419	5	54°31.77 N	10°02.36 E	02.03.2009	10:09	15.19459886	2.51	15.62	379.4	0.01	0.01	
419	10	54°31.77 N	10°02.36 E	02.03.2009	10:09	15.40710688	2.53	15.9	383.5	0.01	0.5	
419	15	54°31.77 N	10°02.36 E	02.03.2009	10:09	15.6739867	2.58	16.93	381.1	0.17	3.25	

419	20	54°31.77 N	10°02.36 E	02.03.2009	10:09	16.0148604	2.66	17.44	333	0.35	5.49
419	25	54°31.77 N	10°02.36 E	02.03.2009	10:09	16.6536184	2.69	17.51	324.4	0.44	6.15
420	1	54°31.77 N	10°02.36 E	24.04.2009		13.87555564	9.01	14.99	345	0.03	0.07
420	5	54°31.77 N	10°02.36 E	24.04.2009		14.1836028	7.99	15.77	348.1	0.05	0.03
420	10	54°31.77 N	10°02.36 E	24.04.2009		14.0323947	7.74	16.02	349.3	0.07	0.14
420	15	54°31.77 N	10°02.36 E	24.04.2009		14.07303635	7.89	16.4	343.9	0.1	0.26
420	20	54°31.77 N	10°02.36 E	24.04.2009		15.42755128	5.47	17.21	314.5	0.22	1.1
420	25	54°31.77 N	10°02.36 E	24.04.2009		24.57230209	4.24	19.73	213.2	0.15	5.43
421	1	54°31.77 N	10°02.36 E	20.05.2009		11.61504125	12.24	14.83	285.1	0.05	0.02
421	5	54°31.77 N	10°02.36 E	20.05.2009		10.48621014	12.16	14.92	287.1	0.05	0.01
421	10	54°31.77 N	10°02.36 E	20.05.2009		12.20245466	11.37	15.17	317.3	0.06	0.03
421	15	54°31.77 N	10°02.36 E	20.05.2009		14.04129579	7.67	18.98	266.7	0.48	1.98
421	20	54°31.77 N	10°02.36 E	20.05.2009		14.70017856	7.6	20.16	239.1	0.46	4.27
421	25	54°31.77 N	10°02.36 E	20.05.2009		17.81069664	7.11	21.11	196.6	0.32	4.7
422	1	54°31.77 N	10°02.36 E	23.06.2009	10:00:38	15.48868636	15.16	16.02	301.1	0.05	0.05
422	5	54°31.77 N	10°02.36 E	23.06.2009	10:00:38	12.34542223	15.17	16.03	275.4	0.05	0.02
422	10	54°31.77 N	10°02.36 E	23.06.2009	10:00:38	12.77966127	14.3	16.03	303	0.05	0.01
422	15	54°31.77 N	10°02.36 E	23.06.2009	10:00:38	13.56778148	12.06	19.28	241.4	0.15	0.16
422	20	54°31.77 N	10°02.36 E	23.06.2009	10:00:38		9.65	20.63	171	0.12	2.62

422	25	54°31.77 N	10°02.36 E	23.06.2009	10:00:38		8.63	21.15	135	0.18	4.45
423	1	54°31.77 N	10°02.36 E	14.07.2009	10:04:26	8.976259256	17.4	16.45	294.7	0.03	0.05
423	5	54°31.77 N	10°02.36 E	14.07.2009	10:04:26	9.113596381	16.97	16.57	295.8	0.02	0
423	10	54°31.77 N	10°02.36 E	14.07.2009	10:04:26	9.572776257	15.49	17.02	278.9	0.01	0.01
423	15	54°31.77 N	10°02.36 E	14.07.2009	10:04:26	12.78101873	12.61	19.15	226.3	0.09	0.16
423	20	54°31.77 N	10°02.36 E	14.07.2009	10:04:26	15.9967571	10.62	20.2	134.2	0.22	1.32
423	25	54°31.77 N	10°02.36 E	14.07.2009	10:04:26	14.50125774	8.97	21.13	39.9	0.52	6.65
424	1	54°31.77 N	10°02.36 E	20.08.2009	09:49:09		18.9	15.61	269.1	0.03	0.17
424	5	54°31.77 N	10°02.36 E	20.08.2009	09:49:09		18.87	15.9	267.6	0.01	0.07
424	10	54°31.77 N	10°02.36 E	20.08.2009	09:49:09		14.79	19.13	263.5	0.01	0.01
424	15	54°31.77 N	10°02.36 E	20.08.2009	09:49:09		12.56	20.47	90.2	0.01	0.03
424	20	54°31.77 N	10°02.36 E	20.08.2009	09:49:09		12.06	21.56	70.1	0.01	0.04
424	25	54°31.77 N	10°02.36 E	20.08.2009	09:49:09		11.65	23.36	51.4	0.12	0.74
425	1	54°31.77 N	10°02.36 E	15.09.2009	09:55:47	11.75410995	16.21	17.93	278	0.02	0.06
425	5	54°31.77 N	10°02.36 E	15.09.2009	09:55:47	11.52902253	16.21	17.94	277.4	0.01	0
425	10	54°31.77 N	10°02.36 E	15.09.2009	09:55:47	11.53082523	16.21	17.94	276.9	0	0.05
425	15	54°31.77 N	10°02.36 E	15.09.2009	09:55:47	11.55127516	16.21	17.94	276.1	0	0.1
425	20	54°31.77 N	10°02.36 E	15.09.2009	09:55:47	11.34419306	12.94	21.91	69.5	0.34	0.98
425	25	54°31.77 N	10°02.36 E	15.09.2009	09:55:47	12.10046259	12.56	22.74	41.4	0.77	2.64

426	1	54°31.77 N	10°02.36 E	19.10.2009	11:48:26	11.84555526	10.94	19.31	296.6	0.05	0.04
426	5	54°31.77 N	10°02.36 E	19.10.2009	11:48:26	11.68557968	10.95	19.32	296.9	0.01	0.1
426	10	54°31.77 N	10°02.36 E	19.10.2009	11:48:26	12.43723482	10.94	19.33	295.7	0.02	0.05
426	15	54°31.77 N	10°02.36 E	19.10.2009	11:48:26		10.93	19.39	295.5	0.02	0.13
426	20	54°31.77 N	10°02.36 E	19.10.2009	11:48:26	10.63884954	10.85	19.92	295	0.04	0.26
426	25	54°31.77 N	10°02.36 E	19.10.2009	11:48:26	10.28818017	11.06	20.37	279.2	0.09	0.66
428	1	54°31.77 N	10°02.36 E	15.12.2009	09:46:42		5.7	17.17	359.5	0.01	0.08
428	5	54°31.77 N	10°02.36 E	15.12.2009	09:46:42		6.18	17.37	356.6	0.02	0.01
428	10	54°31.77 N	10°02.36 E	15.12.2009	09:46:42		6.48	17.52	340.4	0.04	0.73
428	15	54°31.77 N	10°02.36 E	15.12.2009	09:46:42		6.91	17.94	318	0.16	2.43
428	20	54°31.77 N	10°02.36 E	15.12.2009	09:46:42		8.7	22.2	266.2	0.23	4.8
428	25	54°31.77 N	10°02.36 E	15.12.2009	09:46:42		8.97	24.28	219.1	0.27	5.32
429	1	54°31.77 N	10°02.36 E	19.01.2010	09:50:36	14.9097378	1.27	17.45	388.6	0.29	3.62
429	5	54°31.77 N	10°02.36 E	19.01.2010	09:50:36	14.71157483	1.27	17.46	390.2	0.29	3.74
429	10	54°31.77 N	10°02.36 E	19.01.2010	09:50:36	14.74468908	1.28	17.46	388.2	0.29	3.88
429	15	54°31.77 N	10°02.36 E	19.01.2010	09:50:36	15.37822538	1.35	17.51	386.6	0.29	3.93
429	20	54°31.77 N	10°02.36 E	19.01.2010	09:50:36	14.74800504	1.44	17.53	324.2	0.32	4.81
429	25	54°31.77 N	10°02.36 E	19.01.2010	09:50:36	15.23107307	5.71	21.29	210.1	0.42	7.05

431	1	54°31.77 N	10°02.36 E	19.03.2010	09:48:06	16.12172686	0.99	16.61	442.5	0.07	0.12
431	5	54°31.77 N	10°02.36 E	19.03.2010	09:48:06	13.86205625	1.03	16.6	443.4	0.06	0.13
431	10	54°31.77 N	10°02.36 E	19.03.2010	09:48:06	14.72188448	1.03	16.59	433.4	0.08	0.32
431	15	54°31.77 N	10°02.36 E	19.03.2010	09:48:06	14.52971583	0.42	16.84	357.2	0.11	1.36
431	20	54°31.77 N	10°02.36 E	19.03.2010	09:48:06	13.0075641	1.53	20.7	290.5	0.11	1.99
431	25	54°31.77 N	10°02.36 E	19.03.2010	09:48:06	12.43668835	1.66	21.14	298.1	0.09	1.88
432	1	54°31.77 N	10°02.36 E	26.04.2010	10:28:12	12.79841347	7.93	13.79	359.5	0.03	0.12
432	5	54°31.77 N	10°02.36 E	26.04.2010	10:28:12	13.01181393	7.46	14.17	359.2	0	0.02
432	10	54°31.77 N	10°02.36 E	26.04.2010	10:28:12	14.55048308	4.69	18.44	357.9	0	0.26
432	15	54°31.77 N	10°02.36 E	26.04.2010	10:28:12	13.96349591	3.94	19.68	314.6	0.05	0.77
432	20	54°31.77 N	10°02.36 E	26.04.2010	10:28:12	15.6462077	3.17	21.61	243.4	0.11	1.71
432	25	54°31.77 N	10°02.36 E	26.04.2010	10:28:12	17.80327949	3.06	22.13	232.9	0.17	2.21
433	1	54°31.77 N	10°02.36 E	19.05.2010	10:40:55		9.23	13.54	340.6	0.03	0.11
433	5	54°31.77 N	10°02.36 E	19.05.2010	10:40:55		9.22	13.54	341.1	0.02	0.02
433	10	54°31.77 N	10°02.36 E	19.05.2010	10:40:55		9.19	13.54	336.9	0.02	0.13
433	15	54°31.77 N	10°02.36 E	19.05.2010	10:40:55		7.38	16.32	306	0.03	0.43
433	20	54°31.77 N	10°02.36 E	19.05.2010	10:40:55		3.88	20.71	211.7	0.4	2.21
433	25	54°31.77 N	10°02.36 E	19.05.2010	10:40:55		3.42	21.71	167.3	0.66	3.05
434	1	54°31.77 N	10°02.36 E	02.06.2010	10:16:43	10.71973487	12.23	13.05	326.6	0.07	0.06

434	5	54°31.77 N	10°02.36 E	02.06.2010	10:16:43	14.75975941	12.21	13.07	330.4	0.06	0.03
434	10	54°31.77 N	10°02.36 E	02.06.2010	10:16:43	12.08732091	11.7	13.5	324.4	0.06	0.11
434	15	54°31.77 N	10°02.36 E	02.06.2010	10:16:43	13.7234449	7.43	17.91	297.1	0.05	0.23
434	20	54°31.77 N	10°02.36 E	02.06.2010	10:16:43	27.22981073	4.39	20.6	234.4	0.34	1.8
434	25	54°31.77 N	10°02.36 E	02.06.2010	10:16:43	28.50647121	3.66	21.54	114.6	0.5	3.33
435	1	54°31.77 N	10°02.36 E	01.07.2010	10:05:47	8.811144459	17.76	12.73	298	0.01	0.07
435	5	54°31.77 N	10°02.36 E	01.07.2010	10:05:47	8.828108436	17.55	12.71	295.8	0.01	0.01
435	10	54°31.77 N	10°02.36 E	01.07.2010	10:05:47	9.968214495	14.08	13.99	284.3	0.04	0.05
435	15	54°31.77 N	10°02.36 E	01.07.2010	10:05:47	12.07184966	11.05	16.2	280.8	0.05	0.13
435	20	54°31.77 N	10°02.36 E	01.07.2010	10:05:47	14.58591298	7.32	18.786	188.8	0.22	0.93
435	25	54°31.77 N	10°02.36 E	01.07.2010	10:05:47	14.53719245	4.29	21.114	70.9	0.17	3.15
436	1	54°31.77 N	10°02.36 E	10.08.2010	09:46:58	8.026487238	19.55	12.5	276.7	0.05	0.2
436	5	54°31.77 N	10°02.36 E	10.08.2010	09:46:58	8.763638788	19.5	12.65	275.2	0.04	0.02
436	10	54°31.77 N	10°02.36 E	10.08.2010	09:46:58	11.41558313	16.14	15.57	245.8	0	0.04
436	15	54°31.77 N	10°02.36 E	10.08.2010	09:46:58	14.63716024	11.44	18.94	157.7	0.02	0.17
436	20	54°31.77 N	10°02.36 E	10.08.2010	09:46:58	16.25168123	7.47	22.12	75.7	0.22	6.61
436	25	54°31.77 N	10°02.36 E	10.08.2010	09:46:58	12.38446619	9.59	24.74	28.5	0.65	6.08
437	1	54°31.77 N	10°02.36 E	21.09.2010	10:00:32	10.13063779	14.25	15.34	285.4	0.01	0.11
437	5	54°31.77 N	10°02.36 E	21.09.2010	10:00:32	14.75343466	14.21	15.55	286.5	0.01	0.01

437	10	54°31.77 N	10°02.36 E	21.09.2010	10:00:32	11.76771206	14.09	16.56	272.2	0.01	0.05
437	15	54°31.77 N	10°02.36 E	21.09.2010	10:00:32	11.38909853	13.71	17.44	205.5	0.09	0.27
437	20	54°31.77 N	10°02.36 E	21.09.2010	10:00:32	16.3043826	10.85	21.56	34.1	0.34	2.61
437	25	54°31.77 N	10°02.36 E	21.09.2010	10:00:32	11.6890804	9.52	22.33	10.3	0.2	4.56
438	1	54°31.77 N	10°02.36 E	13.10.2010	10:59:35	14.05219992	12.41	16.24	300.1	0.01	0.09
438	5	54°31.77 N	10°02.36 E	13.10.2010	10:59:35	12.53418193	12.45	16.31	299.5	0.01	0.01
438	10	54°31.77 N	10°02.36 E	13.10.2010	10:59:35	11.08387916	12.92	16.85	295.9	0.01	0.03
438	15	54°31.77 N	10°02.36 E	13.10.2010	10:59:35	9.667744891	13.06	17.03	280.2	0.02	0.13
438	20	54°31.77 N	10°02.36 E	13.10.2010	10:59:35	10.48191104	13.09	19.87	179	0.05	0.42
438	25	54°31.77 N	10°02.36 E	13.10.2010	10:59:35	10.9936946	11.4	21.21	26.6	0.3	2.21
439	1	54°31.77 N	10°02.36 E	16.11.2010	10:01:22	12.93633166	8.93	19.42	305.8	0.37	2.59
439	5	54°31.77 N	10°02.36 E	16.11.2010	10:01:22	13.15482046	8.91	19.4	296.7	0.38	2.82
439	10	54°31.77 N	10°02.36 E	16.11.2010	10:01:22	14.96020003	9.54	20.3	276.3	0.46	3.35
439	15	54°31.77 N	10°02.36 E	16.11.2010	10:01:22	13.40319814	9.57	20.75	267	0.37	3.18
439	20	54°31.77 N	10°02.36 E	16.11.2010	10:01:22	11.43244327	9.92	22.67	246.6	0.14	2.23
439	25	54°31.77 N	10°02.36 E	16.11.2010	10:01:22	10.60917105	9.93	22.74	243.8	0.15	2.4
442	1	54°31.77 N	10°02.36 E	18.02.2011	09:52:20		1.4	18.46	384.5	0.24	6.18
442	5	54°31.77 N	10°02.36 E	18.02.2011	09:52:20		1.4	18.46	386	0.23	6.19
442	10	54°31.77 N	10°02.36 E	18.02.2011	09:52:20		1.4	18.46	385.9	0.23	6.26

442	15	54°31.77 N	10°02.36 E	18.02.2011	09:52:20		1.42	18.53	383.4	0.24	6.29
442	20	54°31.77 N	10°02.36 E	18.02.2011	09:52:20		2.97	22.67	329.2	0.1	6.08
442	25	54°31.77 N	10°02.36 E	18.02.2011	09:52:20		3.06	23.05	325.7	0.09	5.9
443	1	54°31.77 N	10°02.36 E	08.03.2011	10:01:22	11.78615009	0.48	14.24	479.4	0.24	0.02
443	5	54°31.77 N	10°02.36 E	08.03.2011	10:01:22	13.00162066	0.59	16.22	439.2	0.22	0.77
443	10	54°31.77 N	10°02.36 E	08.03.2011	10:01:22	12.46765936	0.45	17.17	425.7	0.15	0.91
443	15	54°31.77 N	10°02.36 E	08.03.2011	10:01:22	13.65840736	0.63	17.84	400.4	0.19	2.56
443	20	54°31.77 N	10°02.36 E	08.03.2011	10:01:22	14.05726777	1.08	18.79	365.6	0.21	3.9
443	25	54°31.77 N	10°02.36 E	08.03.2011	10:01:22		2.78	22.3	297.9	0.27	5.9
444	1	54°31.77 N	10°02.36 E	19.04.2011	10:30:13	17.1857872	6.9	17	391.7	0.02	0.03
444	5	54°31.77 N	10°02.36 E	19.04.2011	10:30:13	22.01144957	6.56	16.95	387.2	0.03	0.01
444	10	54°31.77 N	10°02.36 E	19.04.2011	10:30:13	20.98244598	3.9	17.48	346.3	0.05	0.53
444	15	54°31.77 N	10°02.36 E	19.04.2011	10:30:13		3.89	18.67	325.6	0.04	0.73
444	20	54°31.77 N	10°02.36 E	19.04.2011	10:30:13	18.33808326	4.19	20.947	302.3	0.06	1.65
444	25	54°31.77 N	10°02.36 E	19.04.2011	10:30:13	18.41947846	4.64	21.575	298.5	0.06	1.81
445	1	54°31.77 N	10°02.36 E	13.05.2011	09:50:37	10.84960819	11.46	14.06	337.1	0.06	0.03
445	5	54°31.77 N	10°02.36 E	13.05.2011	09:50:37	11.75436917	11.52	14.19	340.2	0.06	0.01
445	10	54°31.77 N	10°02.36 E	13.05.2011	09:50:37	13.57600214	11.49	15.75	330.8	0.05	0.05
445	15	54°31.77 N	10°02.36 E	13.05.2011	09:50:37	11.29267812	10.75	16.59	312.8	0.05	0.11

445	20	54°31.77 N	10°02.36 E	13.05.2011	09:50:37	6.868024379	6.26	18.87	270.6	0.16	0.93
445	25	54°31.77 N	10°02.36 E	13.05.2011	09:50:37	17.01168751	4.4	20.88	241.5	0.26	2.36
446	1	54°31.77 N	10°02.36 E	21.06.2011	10:25:49	8.935930495	15.4	15.58	290.8	0.05	0.06
446	5	54°31.77 N	10°02.36 E	21.06.2011	10:25:49	9.663706879	15.01	15.87	286.8	0.06	0.04
446	10	54°31.77 N	10°02.36 E	21.06.2011	10:25:49	10.58732895	11.68	17.69	265.4	0.05	0.01
446	15	54°31.77 N	10°02.36 E	21.06.2011	10:25:49	11.88659613	8.19	20.22	225.3	0.1	0.52
446	20	54°31.77 N	10°02.36 E	21.06.2011	10:25:49	14.26859117	6.96	21.76	170.5	0.32	4.54
446	25	54°31.77 N	10°02.36 E	21.06.2011	10:25:49	16.0949749	6.91	22.12	162.2	0.29	5.25
447	1	54°31.77 N	10°02.36 E	25.07.2011	09:48:36	11.36219366	16.03	16.44	268.8	0.07	0.03
447	5	54°31.77 N	10°02.36 E	25.07.2011	09:48:36	10.46394201	15.65	16.87	250.8	0.07	0.03
447	10	54°31.77 N	10°02.36 E	25.07.2011	09:48:36	13.17908757	14.34	17.85	208.1	0.1	0.51
447	15	54°31.77 N	10°02.36 E	25.07.2011	09:48:36	15.11440411	11.74	20.26	179.9	0.15	1.51
447	20	54°31.77 N	10°02.36 E	25.07.2011	09:48:36	15.36701649	10.92	21.44	170.7	0.16	2.33
447	25	54°31.77 N	10°02.36 E	25.07.2011	09:48:36	16.2549769	9.43	22.46	144.3	0.16	3.43
448	1	54°31.77 N	10°02.36 E	01.08.2011	11:06:18	8.302751584	17.81	14.2	289.2	0.01	0.03
448	5	54°31.77 N	10°02.36 E	01.08.2011	11:06:18	7.985503409	17.77	14.23	286.8	0.01	0.01
448	10	54°31.77 N	10°02.36 E	01.08.2011	11:06:18	9.233731323	16.26	15.89	254	0.01	0.02
448	15	54°31.77 N	10°02.36 E	01.08.2011	11:06:18	9.092036357	14.6	17.54	204.4	0.03	0.1
448	20	54°31.77 N	10°02.36 E	01.08.2011	11:06:18	13.41314969	10.39	21.4	128.7	0.12	1.48

448	25	54°31.77 N	10°02.36 E	01.08.2011	11:06:18	12.89402973	9.36	22.84	117.7	0.14	3.01
449	1	54°31.77 N	10°02.36 E	21.09.2011	11:06:18	9.642140171	13.184	20.648	202.5	0.02	0.01
449	5	54°31.77 N	10°02.36 E	21.09.2011	11:06:18	9.655295593	13.132	20.656	187.7	0.03	0.03
449	10	54°31.77 N	10°02.36 E	21.09.2011	11:06:18	9.215925766	12.844	21.711	88.3	0.08	0.09
449	15	54°31.77 N	10°02.36 E	21.09.2011	11:06:18	9.352787965	12.959	22.57	108.5	0.14	0.25
449	20	54°31.77 N	10°02.36 E	21.09.2011	11:06:18	8.418264811	12.201	23.272	85.4	0.23	0.56
449	25	54°31.77 N	10°02.36 E	21.09.2011	11:06:18	7.273030731	12.222	23.544	97.6	0.19	0.54
451	1	54°31.77 N	10°02.36 E	08.11.2011	11:07:35	13.59028665	10.64	20.82	287.6	0.05	0.24
451	5	54°31.77 N	10°02.36 E	08.11.2011	11:07:35	12.67673689	10.64	20.81	287.9	0.05	0.23
451	10	54°31.77 N	10°02.36 E	08.11.2011	11:07:35	13.39078496	10.64	20.83	286.7	0.05	0.21
451	15	54°31.77 N	10°02.36 E	08.11.2011	11:07:35	12.83871018	10.64	20.87	288.3	0.03	0.15
451	20	54°31.77 N	10°02.36 E	08.11.2011	11:07:35	10.49819479	10.65	20.94	288.6	0.01	0.07
451	25	54°31.77 N	10°02.36 E	08.11.2011	11:07:35	9.162214307	11.45	22.18	161.4	0.52	1.05
453	1	54°31.77 N	10°02.36 E	11.01.2012	11:19:51	12.19281252	5.28	21	337.8	0.15	5.16
453	5	54°31.77 N	10°02.36 E	11.01.2012	11:19:51	14.26131651	5.24	21	337.4	0.15	5.18
453	10	54°31.77 N	10°02.36 E	11.01.2012	11:19:51	14.37144511	5.25	21.01	337.6	0.16	5.27
453	15	54°31.77 N	10°02.36 E	11.01.2012	11:19:51	13.77506756	5.31	21.1	326.4	0.18	5.51
453	20	54°31.77 N	10°02.36 E	11.01.2012	11:19:51	13.67101996	6.22	22.11	286.2	0.22	6.32
453	25	54°31.77 N	10°02.36 E	11.01.2012	11:19:51	11.9051395	6.55	22.39	272.4	0.27	6.38

455	1	54°31.77 N	10°02.36 E	13.03.2012	10:26:25	16.2491368	3.217	16.034	429.8	0.07	0.05
455	5	54°31.77 N	10°02.36 E	13.03.2012	10:26:25	17.47501977	3.19	16.036	429.8	0.06	0.02
455	10	54°31.77 N	10°02.36 E	13.03.2012	10:26:25		3.259	16.061	430.1	0.05	0.01
455	15	54°31.77 N	10°02.36 E	13.03.2012	10:26:25	17.51147265	3.4	16.077	422.7	0.11	0.07
455	20	54°31.77 N	10°02.36 E	13.03.2012	10:26:25	18.52905454	2.479	17.753	367.3	0.44	4.96
455	25	54°31.77 N	10°02.36 E	13.03.2012	10:26:25	20.13657094	2.067	18.969	351	0.55	7.44
456	1	54°31.77 N	10°02.36 E	10.04.2012	12:50:17	16.40345583	5.167	16.295	355.6	0	0.01
456	5	54°31.77 N	10°02.36 E	10.04.2012	12:50:17	15.51889356	5.16	16.297	355.3	0.01	0.02
456	10	54°31.77 N	10°02.36 E	10.04.2012	12:50:17	16.77514632	5.141	16.317	351.4	0.01	0.05
456	15	54°31.77 N	10°02.36 E	10.04.2012	12:50:17	16.604436	4.83	16.992	332.3	0.02	0.23
456	20	54°31.77 N	10°02.36 E	10.04.2012	12:50:17	17.12842176	4.663	17.394	316.9	0.03	0.56
456	25	54°31.77 N	10°02.36 E	10.04.2012	12:50:17	18.90655666	4.423	17.923	301.6	0.05	0.7
457	1	54°31.77 N	10°02.36 E	14.05.2012	09:58:42	12.72445794	9.87	13.3	333.7	0.02	0.03
457	5	54°31.77 N	10°02.36 E	14.05.2012	09:58:42	11.98188802	9.78	13.47	338.5	0.03	0.03
457	10	54°31.77 N	10°02.36 E	14.05.2012	09:58:42		9.32	14.43	336	0.02	0.01
457	15	54°31.77 N	10°02.36 E	14.05.2012	09:58:42	12.8783357	7.55	16.33	317.1	0.1	0.25
457	20	54°31.77 N	10°02.36 E	14.05.2012	09:58:42		5.75	17.66	258.3	0.33	1.21
457	25	54°31.77 N	10°02.36 E	14.05.2012	09:58:42	12.9756249	5.66	17.77	249.2	0.36	1.41
458	1	54°31.77 N	10°02.36 E	26.06.2012	09:42:23	12.23938015	14.007	14.673	299.3	0.05	0.04

458	5	54°31.77 N	10°02.36 E	26.06.2012	09:42:23	10.69672598	14.01	14.677	297.1	0.04	0.02
458	10	54°31.77 N	10°02.36 E	26.06.2012	09:42:23	11.17102168	13.468	15.239	288.2	0.05	0.01
458	15	54°31.77 N	10°02.36 E	26.06.2012	09:42:23	12.07722084	10.886	16.737	264.1	0.05	0.04
458	20	54°31.77 N	10°02.36 E	26.06.2012	09:42:23	14.18150032	9.708	17.87	207.9	0.07	0.14
458	25	54°31.77 N	10°02.36 E	26.06.2012	09:42:23	13.68324764	9.299	18.803	148.4	0.08	0.17
459	1	54°31.77 N	10°02.36 E	16.07.2012	11:36:19	10.90418255	15.748	15.194	288.7	0.01	0.02
459	5	54°31.77 N	10°02.36 E	16.07.2012	11:36:19	10.9233882	15.703	15.198	283.5	0.02	0.03
459	10	54°31.77 N	10°02.36 E	16.07.2012	11:36:19	12.06949498	14.102	15.957	267.7	0.02	0.01
459	15	54°31.77 N	10°02.36 E	16.07.2012	11:36:19	12.78066571	12.42	16.906	234.5	0.08	0.12
459	20	54°31.77 N	10°02.36 E	16.07.2012	11:36:19	13.51841284	9.484	18.362	95.3	0.36	0.98
459	25	54°31.77 N	10°02.36 E	16.07.2012	11:36:19	13.7775937	9.256	18.639	82.9	0.55	1.83
460	1	54°31.77 N	10°02.36 E	07.08.2012	09:50:20	11.00600884	15.104	16.829	254.9	0.05	0.02
460	5	54°31.77 N	10°02.36 E	07.08.2012	09:50:20	12.18696781	14.927	16.892	229.2	0.06	0.03
460	10	54°31.77 N	10°02.36 E	07.08.2012	09:50:20	11.86321941	12.609	18.795	177.2	0.07	0.04
460	15	54°31.77 N	10°02.36 E	07.08.2012	09:50:20	11.98363859	12.322	19.056	156.6	0.09	0.07
460	20	54°31.77 N	10°02.36 E	07.08.2012	09:50:20	11.73897717	11.623	20.708	129.1	0.12	0.07
460	25	54°31.77 N	10°02.36 E	07.08.2012	09:50:20	9.350190461	11.389	22.979	76.7	0.04	0.08
461	1	54°31.77 N	10°02.36 E	27.09.2012	10:14:06	13.66490819	13.253	18.947	266.6	0.04	0.01
461	5	54°31.77 N	10°02.36 E	27.09.2012	10:14:06	13.27666281	13.284	18.996	251.7	0.04	0.03

461	10	54°31.77 N	10°02.36 E	27.09.2012	10:14:06	11.10117274	13.857	22.378	101.6	0.14	0.24
461	15	54°31.77 N	10°02.36 E	27.09.2012	10:14:06	9.139116547	13.594	22.639	82.5	0.15	0.26
461	20	54°31.77 N	10°02.36 E	27.09.2012	10:14:06	9.151297489	13.489	22.806	74.8	0.18	0.26
461	25	54°31.77 N	10°02.36 E	27.09.2012	10:14:06	6.396170734	13.013	22.953	51.3	0.24	0.32
462	1	54°31.77 N	10°02.36 E	02.10.2012	09:46:32	12.48744526	13.46	21.019	221	0.02	0.02
462	5	54°31.77 N	10°02.36 E	02.10.2012	09:46:32	11.82860731	13.47	21.075	217.1	0.02	0.02
462	10	54°31.77 N	10°02.36 E	02.10.2012	09:46:32	8.839588666	13.503	21.487	203.5	0.03	0.06
462	15	54°31.77 N	10°02.36 E	02.10.2012	09:46:32	11.93192972	13.814	22.216	130.5	0.09	0.17
462	20	54°31.77 N	10°02.36 E	02.10.2012	09:46:32	8.454898636	12.909	22.903	23.9	0.28	0.22
462	25	54°31.77 N	10°02.36 E	02.10.2012	09:46:32	10.50957837	13.011	23.584	55	0.27	0.31
463	1	54°31.77 N	10°02.36 E	06.11.2012	09:55:43	14.23460833	9.466	18.926	300.9	0.03	0.03
463	5	54°31.77 N	10°02.36 E	06.11.2012	09:55:43	14.17289728	9.468	18.933	302.8	0.02	0.01
463	10	54°31.77 N	10°02.36 E	06.11.2012	09:55:43	13.73938821	9.507	18.961	290.8	0.03	0
463	15	54°31.77 N	10°02.36 E	06.11.2012	09:55:43	13.13901191	10.063	19.607	258.8	0.05	0.04
463	20	54°31.77 N	10°02.36 E	06.11.2012	09:55:43	11.98632282	11.876	21.243	119.7	0.48	0.84
463	25	54°31.77 N	10°02.36 E	06.11.2012	09:55:43	11.68592001	12.118	21.6	95.8	0.59	0.95
464	1	54°31.77 N	10°02.36 E	04.12.2012	09:50:43	16.31790389	6.761	18.053	327.2	0.13	0.14
464	5	54°31.77 N	10°02.36 E	04.12.2012	09:50:43	16.38910109	6.792	18.116	268.2	0.13	0.26
464	10	54°31.77 N	10°02.36 E	04.12.2012	09:50:43	15.94714478	8.064	19.093	276.8	0.24	0.54

464	15	54°31.77 N	10°02.36 E	04.12.2012	09:50:43	15.90196957	8.574	19.592	264.3	0.5	0.93
464	20	54°31.77 N	10°02.36 E	04.12.2012	09:50:43	14.80977549	8.699	19.7	206.8	0.66	1.25
464	25	54°31.77 N	10°02.36 E	04.12.2012	09:50:43	15.43561999	8.849	19.796	198.9	0.72	1.44
466	1	54°31.77 N	10°02.36 E	06.02.2013	10:49:59	18.12632622	2.034	15.576	380.7	0.86	6
466	5	54°31.77 N	10°02.36 E	06.02.2013	10:49:59	18.16439178	2.029	15.579	380.7	0.84	6.02
466	10	54°31.77 N	10°02.36 E	06.02.2013	10:49:59	18.15450998	2.034	15.592	379.2	0.84	6.01
466	15	54°31.77 N	10°02.36 E	06.02.2013	10:49:59	18.46177233	2.259	15.891	365.1	0.86	6.44
466	20	54°31.77 N	10°02.36 E	06.02.2013	10:49:59	17.13237944	3.642	18.101	284.8	1.01	6.75
466	25	54°31.77 N	10°02.36 E	06.02.2013	10:49:59	18.20536294	4.57	19.653	249.8	1.03	7.05
467	1	54°31.77 N	10°02.36 E	05.03.2013	10:51:02	20.86836796	1.257	14.043	414.8	0.59	3.93
467	5	54°31.77 N	10°02.36 E	05.03.2013	10:51:02	21.01090089	1.282	15.086	410.3	0.71	6.16
467	10	54°31.77 N	10°02.36 E	05.03.2013	10:51:02	21.39500179	1.222	15.344	386.8	0.81	7.05
467	15	54°31.77 N	10°02.36 E	05.03.2013	10:51:02	21.51627703	1.167	15.427	337.2	0.87	7.38
467	20	54°31.77 N	10°02.36 E	05.03.2013	10:51:02	20.25118925	1.969	17.575	268.9	0.87	7.56
467	25	54°31.77 N	10°02.36 E	05.03.2013	10:51:02	21.82257549	3.152	20.356	223.3	0.82	8
468	1	54°31.77 N	10°02.36 E	03.04.2013	10:14:50	13.66908221	1.478	12.769	443.4	0.17	0.91
468	5	54°31.77 N	10°02.36 E	03.04.2013	10:14:50	15.26746264	1.036	13.351	433.5	0.3	2.11
468	10	54°31.77 N	10°02.36 E	03.04.2013	10:14:50	17.84835166	1.067	13.774	422.1	0.46	3.66
468	15	54°31.77 N	10°02.36 E	03.04.2013	10:14:50	18.12853238	0.712	13.926	412.1	0.52	4.56

468	20	54°31.77 N	10°02.36 E	03.04.2013	10:14:50	17.88084976	0.7	14.144	399.7	0.52	4.86
468	25	54°31.77 N	10°02.36 E	03.04.2013	10:14:50	19.64593515	0.64	14.648	393.4	0.47	4.5
469	1	54°31.77 N	10°02.36 E	24.05.2013	10:33:39	12.52146546	11.202	13.05	312.8	0.08	0.02
469	5	54°31.77 N	10°02.36 E	24.05.2013	10:33:39	12.69276322	11.06	15.151	328	0.09	0.01
469	10	54°31.77 N	10°02.36 E	24.05.2013	10:33:39	12.53203517	11.125	13.225	327.4	0.1	0.03
469	15	54°31.77 N	10°02.36 E	24.05.2013	10:33:39	14.9061183	8.47	14.745	347	0.11	0.01
469	20	54°31.77 N	10°02.36 E	24.05.2013	10:33:39	15.50821951	4.627	20.398	230	0.17	1.01
469	25	54°31.77 N	10°02.36 E	24.05.2013	10:33:39	15.69377397	5.108	21.782	163.2	0.25	1.4
470	1	54°31.77 N	10°02.36 E	04.06.2013	10:10:04	11.40978605	13.869	12.564	312.9	0.05	0.02
470	5	54°31.77 N	10°02.36 E	04.06.2013	10:10:04	12.42384914	13.871	12.563	312.9	0.05	0.03
470	10	54°31.77 N	10°02.36 E	04.06.2013	10:10:04	12.47490234	13.793	12.553	314	0.05	0.05
470	15	54°31.77 N	10°02.36 E	04.06.2013	10:10:04	12.81760374	13.59	12.661	313.7	0.06	0.07
470	20	54°31.77 N	10°02.36 E	04.06.2013	10:10:04	16.33099473	5.983	17.676	278.9	0.13	0.63
470	25	54°31.77 N	10°02.36 E	04.06.2013	10:10:04	17.28640611	5.285	21.715	172.5	0.27	2.06
471	1	54°31.77 N	10°02.36 E	04.07.2013	10:30:39	10.69100481	16.087	13.121	299.9	0.05	0.01
471	5	54°31.77 N	10°02.36 E	04.07.2013	10:30:39	10.92013025	14.877	14.671	295.2	0.05	0.03
471	10	54°31.77 N	10°02.36 E	04.07.2013	10:30:39	14.95527908	8.147	19.573	208.7	0.07	0.04
471	15	54°31.77 N	10°02.36 E	04.07.2013	10:30:39	15.40382886	7.644	21.635	190.2	0.31	1.11
471	20	54°31.77 N	10°02.36 E	04.07.2013	10:30:39	14.81771318	7.373	23.198	188.8	0.34	2.12

471	25	54°31.77 N	10°02.36 E	04.07.2013	10:30:39	13.85235076	7.752	24.791	184.5	0.29	2.41
472	1	54°31.77 N	10°02.36 E	28.08.2013	11:05:05	9.291755986	18.732	15.817	273.4	0.03	0.03
472	5	54°31.77 N	10°02.36 E	28.08.2013	11:05:05	10.29425403	17.851	16.95	267.7	0.03	0.01
472	10	54°31.77 N	10°02.36 E	28.08.2013	11:05:05	10.75322018	16.733	18.52	246.7	0.03	0.02
472	15	54°31.77 N	10°02.36 E	28.08.2013	11:05:05	11.26516197	16.35	18.783	226	0.04	0.03
472	20	54°31.77 N	10°02.36 E	28.08.2013	11:05:05	11.51000152	12.762	22.464	134.5	0.08	0.13
472	25	54°31.77 N	10°02.36 E	28.08.2013	11:05:05	10.43105329	9.082	24.224	49	0.53	1.33
473	1	54°31.77 N	10°02.36 E	24.09.2013	10:09:55	9.554878402	15.534	15.508	289.3	0.04	0.02
473	5	54°31.77 N	10°02.36 E	24.09.2013	10:09:55	10.37583691	15.538	15.517	288.5	0.03	0.1
473	10	54°31.77 N	10°02.36 E	24.09.2013	10:09:55	9.845582085	15.761	16.443	246.7	0.03	0.01
473	15	54°31.77 N	10°02.36 E	24.09.2013	10:09:55	9.786742641	15.731	17.276	239.4	0.02	0.03
473	20	54°31.77 N	10°02.36 E	24.09.2013	10:09:55	9.560336038	15.152	20.144	109.5	0.03	0.02
473	25	54°31.77 N	10°02.36 E	24.09.2013	10:09:55	5.314754759	11.247	23.057	27.1	0.2	0.013
474	1	54°31.77 N	10°02.36 E	01.10.2013	10:08:17	10.46384604	14.162	16.389	279	0.04	0.04
474	5	54°31.77 N	10°02.36 E	01.10.2013	10:08:17	10.37615747	14.28	16.651	262.9	0.04	0.01
474	10	54°31.77 N	10°02.36 E	01.10.2013	10:08:17	10.15729116	14.455	17.149	248	0.04	0.02
474	15	54°31.77 N	10°02.36 E	01.10.2013	10:08:17	8.593077961	14.633	20.35	68.5	0.06	0.04
474	20	54°31.77 N	10°02.36 E	01.10.2013	10:08:17	8.209142831	13.16	22.386	37.1	0.22	0.17
474	25	54°31.77 N	10°02.36 E	01.10.2013	10:08:17	2.710086896	10.252	23.574	9.8	0.32	0.3

475	1	54°31.77 N	10°02.36 E	05.11.2013	10:24:16	10.48866017	11.473	17.68	273.9	0.13	0.46
475	5	54°31.77 N	10°02.36 E	05.11.2013	10:24:16	11.15269623	11.473	17.695	273.7	0.14	0.51
475	10	54°31.77 N	10°02.36 E	05.11.2013	10:24:16	10.87847084	11.478	17.783	267	0.15	0.79
475	15	54°31.77 N	10°02.36 E	05.11.2013	10:24:16	11.19499428	11.991	19.424	239.7	0.22	1.85
475	20	54°31.77 N	10°02.36 E	05.11.2013	10:24:16	11.19535142	12.16	23.937	238.2	0.3	3.18
475	25	54°31.77 N	10°02.36 E	05.11.2013	10:24:16	11.70352271	12.112	24.343	239.2	0.32	3.31
476	1	54°31.77 N	10°02.36 E	03.12.2013	10:17:22	13.89339691	7.066	19.642	334.6	0.01	0.04
476	5	54°31.77 N	10°02.36 E	03.12.2013	10:17:22	13.9209849	7.078	19.644	334.4	0.01	0.01
476	10	54°31.77 N	10°02.36 E	03.12.2013	10:17:22	14.47821079	7.091	19.669	327.2	0.05	0.14
476	15	54°31.77 N	10°02.36 E	03.12.2013	10:17:22	14.26020989	9.087	23.003	238.7	0.21	2.66
476	20	54°31.77 N	10°02.36 E	03.12.2013	10:17:22	17.18439524	11.191	25.287	162.5	0.33	5.3
476	25	54°31.77 N	10°02.36 E	03.12.2013	10:17:22	16.5895773	11.143	25.661	151.1	0.35	5.16
477	1	54°31.77 N	10°02.36 E	25.02.2014	09:41:38	14.27574837	2.856	16.62	396.4	0.39	2.9
477	5	54°31.77 N	10°02.36 E	25.02.2014	09:41:38	15.20458224	2.805	16.653	392.3	0.48	3.71
477	10	54°31.77 N	10°02.36 E	25.02.2014	09:41:38	15.80760731	2.641	17.392	371.7	0.67	5.75
477	15	54°31.77 N	10°02.36 E	25.02.2014	09:41:38	15.67082395	2.538	18.227	356.1	0.85	6.76
477	20	54°31.77 N	10°02.36 E	25.02.2014	09:41:38	15.7504203	2.69	19.332	318.9	0.89	7.36
477	25	54°31.77 N	10°02.36 E	25.02.2014	09:41:38	15.53819726	3.433	21.489	311	0.27	7.63
478	1	54°31.77 N	10°02.36 E	05.03.2014	09:41:08	16.17226603	3.242	17.57	418.9	0.1	0.24

478	5	54°31.77 N	10°02.36 E	05.03.2014	09:41:08	18.641766	2.866	18.119	359.6	0.53	4.95
478	10	54°31.77 N	10°02.36 E	05.03.2014	09:41:08	19.07595902	2.752	18.864	333.4	0.5	6.92
478	15	54°31.77 N	10°02.36 E	05.03.2014	09:41:08	16.71219343	3.436	20.255	345.8	0.24	6.32
478	20	54°31.77 N	10°02.36 E	05.03.2014	09:41:08	16.02716413	3.519	20.862	326.2	0.19	7.2
478	25	54°31.77 N	10°02.36 E	05.03.2014	09:41:08	17.29778351	3.652	21.751	301.6	0.15	8
479	1	54°31.77 N	10°02.36 E	15.04.2014	09:54:34	12.07160658	7.286	17.058	348.2	0.01	0.41
479	5	54°31.77 N	10°02.36 E	15.04.2014	09:54:34	12.77780541	7.278	17.091	349.2	0.06	0.44
479	10	54°31.77 N	10°02.36 E	15.04.2014	09:54:34	12.67624445	7.44	17.502	347.4	0.12	0.46
479	15	54°31.77 N	10°02.36 E	15.04.2014	09:54:34	12.64546052	7.365	18.141	345.9	0.16	0.49
479	20	54°31.77 N	10°02.36 E	15.04.2014	09:54:34		6.846	19.611	337.8	0.22	0.51
479	25	54°31.77 N	10°02.36 E	15.04.2014	09:54:34		5.765	22.47	258.7	0.34	2.2
480	1	54°31.77 N	10°02.36 E	07.05.2014	09:50:38	12.32599858	11.093	15.218	326.4	0.33	0.57
480	5	54°31.77 N	10°02.36 E	07.05.2014	09:50:38	13.32844081	11.117	16.101	318.9	0.38	0.58
480	10	54°31.77 N	10°02.36 E	07.05.2014	09:50:38	13.80818081	9.646	17.44	306.6	0.4	0.75
480	15	54°31.77 N	10°02.36 E	07.05.2014	09:50:38	14.43644959	7.875	18.992	283.8	0.45	1.22
480	20	54°31.77 N	10°02.36 E	07.05.2014	09:50:38	15.04551708	6.606	20.926	237.1	0.58	2.7
480	25	54°31.77 N	10°02.36 E	07.05.2014	09:50:38	15.47398882	6.058	22.182	199.8	0.69	3.72
481	1	54°31.77 N	10°02.36 E	21.06.2014	10:23:37	9.990157577	17.016	14.31	287.9	0.07	0.03
481	5	54°31.77 N	10°02.36 E	21.06.2014	10:23:37	9.955937014	16.998	14.332	289.5	0.06	0.01

481	10	54°31.77 N	10°02.36 E	21.06.2014	10:23:37	10.14409438	16.902	15.212	294.3	0.06	0.03
481	15	54°31.77 N	10°02.36 E	21.06.2014	10:23:37	12.03198786	13.177	16.205	280	0.07	0.03
481	20	54°31.77 N	10°02.36 E	21.06.2014	10:23:37	13.63350318	9.701	18.822	169	0.11	0.09
481	25	54°31.77 N	10°02.36 E	21.06.2014	10:23:37	15.34896521	7.483	20.736	99.8	0.1	0.14
482	1	54°31.77 N	10°02.36 E	08.07.2014	09:47:10	9.730200066	18.113	15.471	281.6	0.11	0.05
482	5	54°31.77 N	10°02.36 E	08.07.2014	09:47:10	9.735079801	17.981	15.569	281.7	0.13	0.02
482	10	54°31.77 N	10°02.36 E	08.07.2014	09:47:10	10.8559898	15.149	18.259	267	0	0
482	15	54°31.77 N	10°02.36 E	08.07.2014	09:47:10	10.97171543	14.097	20.105	239.6	0.01	0.01
482	20	54°31.77 N	10°02.36 E	08.07.2014	09:47:10	11.93856763	12.092	21.476	174.2	0.05	0.04
482	25	54°31.77 N	10°02.36 E	08.07.2014	09:47:10	11.45905403	10.921	22.54	120.6	0.08	0.12
483	1	54°31.77 N	10°02.36 E	28.08.2014	10:26:01		16.7	15.589	282.7	0.03	0.06
483	5	54°31.77 N	10°02.36 E	28.08.2014	10:26:01		16.543	16.245	286.3	0.04	0.05
483	10	54°31.77 N	10°02.36 E	28.08.2014	10:26:01		13.886	21.71	161.3	0.02	0.03
483	15	54°31.77 N	10°02.36 E	28.08.2014	10:26:01		14.548	24.496	174.9	0.02	0.04
483	20	54°31.77 N	10°02.36 E	28.08.2014	10:26:01		14.328	24.588	153	0.03	0.05
483	25	54°31.77 N	10°02.36 E	28.08.2014	10:26:01		13.66	25.374	116.3	0.03	0.11
484	1	54°31.77 N	10°02.36 E	23.09.2014	09:43:06	18.11138052	16.507	16.236	280.3	0.06	0.03
484	5	54°31.77 N	10°02.36 E	23.09.2014	09:43:06	17.01155035	16.502	16.234	278.1	0.08	0.03
484	10	54°31.77 N	10°02.36 E	23.09.2014	09:43:06	14.96505489	16.551	16.276	276	0.06	0.02

484	15	54°31.77 N	10°02.36 E	23.09.2014	09:43:06	14.69111903	16.604	16.511	273.9	0	0.01
484	20	54°31.77 N	10°02.36 E	23.09.2014	09:43:06	11.76417917	16.788	16.606	264.2	0.01	0.03
484	25	54°31.77 N	10°02.36 E	23.09.2014	09:43:06	5.863286141	13.181	25.082	0	0.23	0.25
485	1	54°31.77 N	10°02.36 E	21.10.2014	10:10:45	15.84286739	14.337	17.824	278.6	0.16	0.01
485	5	54°31.77 N	10°02.36 E	21.10.2014	10:10:45	13.77948259	14.361	17.899	273.2	0.18	0.02
485	10	54°31.77 N	10°02.36 E	21.10.2014	10:10:45	24.89204545	14.6	18.675	250.6	0.21	0.12
485	15	54°31.77 N	10°02.36 E	21.10.2014	10:10:45	24.84493786	14.602	19.033	243.6	0.24	0.12
485	20	54°31.77 N	10°02.36 E	21.10.2014	10:10:45	27.53445387	14.607	19.436	212	0.24	0.06
485	25	54°31.77 N	10°02.36 E	21.10.2014	10:10:45	21.91304447	13.55	24.146	0	0	0.27
486	1	54°31.77 N	10°02.36 E	18.11.2014	09:50:49	20.43516987	11.556	20.725	269.1	0.5	2.69
486	5	54°31.77 N	10°02.36 E	18.11.2014	09:50:49	25.20406319	11.545	20.723	269.5	0.52	3.31
486	10	54°31.77 N	10°02.36 E	18.11.2014	09:50:49	25.56328166	11.546	20.73	268.8	0.56	3.32
486	15	54°31.77 N	10°02.36 E	18.11.2014	09:50:49	24.52979377	11.561	20.75	268.7	0.59	3.41
486	20	54°31.77 N	10°02.36 E	18.11.2014	09:50:49	15.58325773	11.646	20.856	263.7	0.6	3.66
486	25	54°31.77 N	10°02.36 E	18.11.2014	09:50:49	21.78399724	13.021	23.779	163.3	0.46	5.22
487	1	54°31.77 N	10°02.36 E	16.12.2014	09:50:52	15.58484597	6.616	19.53	318.2	1.24	7.13
487	5	54°31.77 N	10°02.36 E	16.12.2014	09:50:52	16.01693801	6.62	19.536	317.6	1.34	7.14
487	10	54°31.77 N	10°02.36 E	16.12.2014	09:50:52	15.57044886	6.631	19.563	309.5	1.37	7.35
487	15	54°31.77 N	10°02.36 E	16.12.2014	09:50:52	15.08557738	6.693	19.659	312.9	1.11	7.58

487	20	54°31.77 N	10°02.36 E	16.12.2014	09:50:52	14.60943459	7.296	20.821	288.8	0.9	6.44
487	25	54°31.77 N	10°02.36 E	16.12.2014	09:50:52	14.85232452	7.979	23.783	262.3	0.42	6.37
488	1	54°31.77 N	10°02.36 E	06.01.2015	09:54:24	15.45155804	5.606	23.643	332.4	0.69	7.97
488	5	54°31.77 N	10°02.36 E	06.01.2015	09:54:24	14.46544849	5.611	23.658	334.1	0.75	8.14
488	10	54°31.77 N	10°02.36 E	06.01.2015	09:54:24	14.98029753	5.649	23.708	331.9	0.86	8.54
488	15	54°31.77 N	10°02.36 E	06.01.2015	09:54:24	15.31565345	6.277	24.21	310	0.5	7.9
488	20	54°31.77 N	10°02.36 E	06.01.2015	09:54:24	15.7006478	6.997	25.244	284.4	0.43	7.32
488	25	54°31.77 N	10°02.36 E	06.01.2015	09:54:24	14.98766795	7.159	24.478	273.6	0.43	7.23
489	1	54°31.77 N	10°02.36 E	23.02.2015	09:52:42	14.06530394	3.451	23.325	355.3	0.31	4.41
489	5	54°31.77 N	10°02.36 E	23.02.2015	09:52:42	14.85563626	3.467	23.356	353.7	0.42	4.74
489	10	54°31.77 N	10°02.36 E	23.02.2015	09:52:42	15.06318571	3.683	23.727	337.4	0.58	6.84
489	15	54°31.77 N	10°02.36 E	23.02.2015	09:52:42	15.13388706	3.913	24.086	318.1	0.73	7.91
489	20	54°31.77 N	10°02.36 E	23.02.2015	09:52:42	15.39064269	4.049	24.282	305.1	0.9	8.55
489	25	54°31.77 N	10°02.36 E	23.02.2015	09:52:42	15.67921369	4.056	24.292	305.5	1.05	8.6
490	1	54°31.77 N	10°02.36 E	17.03.2015	10:01:02	13.06076516	4.527	18.303	376.9	0.02	0.05
490	5	54°31.77 N	10°02.36 E	17.03.2015	10:01:02	13.28330417	4.389	18.586	372.3	0.01	0.03
490	10	54°31.77 N	10°02.36 E	17.03.2015	10:01:02	15.09284436	4.239	18.938	325.3	0.02	0.29
490	15	54°31.77 N	10°02.36 E	17.03.2015	10:01:02	14.48233481	3.45	21.427	347.8	0.06	1.98
490	20	54°31.77 N	10°02.36 E	17.03.2015	10:01:02	13.87664114	3.715	23.12	316.4	0.16	5.17

490	25	54°31.77 N	10°02.36 E	17.03.2015	10:01:02	16.25117995	3.932	23.619	291.7	0.3	6.81
491	1	54°31.77 N	10°02.36 E	21.04.2015	09:55:36	13.44171115	8.264	16.058	352.2	0.15	0.02
491	5	54°31.77 N	10°02.36 E	21.04.2015	09:55:36	13.62855031	7.745	16.156	353.9	0	0.02
491	10	54°31.77 N	10°02.36 E	21.04.2015	09:55:36	13.28009601	6.79	16.351	346.2	0	0.03
491	15	54°31.77 N	10°02.36 E	21.04.2015	09:55:36	14.49802964	6.247	17.184	322.3	0.03	0.31
491	20	54°31.77 N	10°02.36 E	21.04.2015	09:55:36	15.25416501	4.498	20.001	270.6	0.14	2.81
491	25	54°31.77 N	10°02.36 E	21.04.2015	09:55:36	18.82847704	4.207	22.179	226.5	0.32	5.3
492	1	54°31.77 N	10°02.36 E	12.05.2015	10:35:59	13.29746734	10.691	16.564	329.7	0.04	0.01
492	5	54°31.77 N	10°02.36 E	12.05.2015	10:35:59	12.50071885	10.613	16.589	328	0.04	0.03
492	10	54°31.77 N	10°02.36 E	12.05.2015	10:35:59	13.09891272	9.406	17.071	316.2	0.04	0.07
492	15	54°31.77 N	10°02.36 E	12.05.2015	10:35:59	13.26272582	9.175	17.419	311.8	0.05	0.27
492	20	54°31.77 N	10°02.36 E	12.05.2015	10:35:59	15.58568442	5.623	20.202	240.7	0.21	2.95
492	25	54°31.77 N	10°02.36 E	12.05.2015	10:35:59	16.4238096	4.943	20.943	218.1	0.29	4.08
493	1	54°31.77 N	10°02.36 E	04.06.2015	09:48:51	11.22498243	12.036	16.592	306.2	0.04	0.03
493	5	54°31.77 N	10°02.36 E	04.06.2015	09:48:51	11.57567681	11.706	16.877	303.2	0.06	0.21
493	10	54°31.77 N	10°02.36 E	04.06.2015	09:48:51	11.58401624	9.566	18.495	287.7	0.23	1.77
493	15	54°31.77 N	10°02.36 E	04.06.2015	09:48:51	12.46406546	9.134	18.987	274.5	0.27	2.53
493	20	54°31.77 N	10°02.36 E	04.06.2015	09:48:51	13.61970481	7.397	20.298	204.1	0.33	5.14
493	25	54°31.77 N	10°02.36 E	04.06.2015	09:48:51	14.57045684	6.478	20.988	180.4	0.37	3.63

495	1	54°31.77 N	10°02.36 E	14.07.2015	09:33:48	9.409879276	16.818	15.016	291.8	0.08	0.01
495	5	54°31.77 N	10°02.36 E	14.07.2015	09:33:48	9.644449109	16.683	15.233	289.6	0.08	0.01
495	10	54°31.77 N	10°02.36 E	14.07.2015	09:33:48	9.777900401	15.495	16.235	261.6	0.09	0.11
495	15	54°31.77 N	10°02.36 E	14.07.2015	09:33:48	10.7579344	13.881	17.364	247	0.09	0.08
495	20	54°31.77 N	10°02.36 E	14.07.2015	09:33:48	11.22291208	11.377	18.536	202.9	0.15	0.32
495	25	54°31.77 N	10°02.36 E	14.07.2015	09:33:48	13.00779609	7.944	20.314	115.4	0.25	2.71
496	1	54°31.77 N	10°02.36 E	04.08.2015	09:58:41	7.14584304	17.122	16.389	287	0.05	0.02
496	5	54°31.77 N	10°02.36 E	04.08.2015	09:58:41	6.625784595	16.89	16.434	287.9	0.02	0
496	10	54°31.77 N	10°02.36 E	04.08.2015	09:58:41	8.231420659	15.016	17.205	262.5	0.03	0.05
496	15	54°31.77 N	10°02.36 E	04.08.2015	09:58:41	8.586046923	11.582	19.065	180	0.07	0.13
496	20	54°31.77 N	10°02.36 E	04.08.2015	09:58:41	11.97223953	10.021	19.841	92	0.2	2.53
496	25	54°31.77 N	10°02.36 E	04.08.2015	09:58:41	13.26354727	9.976	20.212	79.9	0.26	4.42
497	1	54°31.77 N	10°02.36 E	10.09.2015	09:50:23	8.960289189	16.548	14.028	286.8	0.07	0.03
497	5	54°31.77 N	10°02.36 E	10.09.2015	09:50:23	9.576092355	16.854	14.381	283.4	0.03	0.01
497	10	54°31.77 N	10°02.36 E	10.09.2015	09:50:23	9.785919012	16.883	14.546	280.3	0.03	0.02
497	15	54°31.77 N	10°02.36 E	10.09.2015	09:50:23	9.213578155	16.835	14.686	256	0.07	0.16
497	20	54°31.77 N	10°02.36 E	10.09.2015	09:50:23	8.811350317	14.834	18.058	80.4	0.75	2.41
497	25	54°31.77 N	10°02.36 E	10.09.2015	09:50:23	8.972331429	14.006	19.568	57.8	0.73	3.14
499	1	54°31.77 N	10°02.36 E	05.11.2015	10:06:48	11.04391337	11.068	16.64	316.8	0.03	0.02

499	5	54°31.77 N	10°02.36 E	05.11.2015	10:06:48	11.74332536	11.054	16.641	315.5	0.03	0.02
499	10	54°31.77 N	10°02.36 E	05.11.2015	10:06:48	11.30889343	11.053	16.656	311.9	0.03	0.04
499	15	54°31.77 N	10°02.36 E	05.11.2015	10:06:48	10.88368371	11.452	16.98	277.3	0.13	0.84
499	20	54°31.77 N	10°02.36 E	05.11.2015	10:06:48	9.326048272	12.8677	19.643	109.8	0.22	5.25
499	25	54°31.77 N	10°02.36 E	05.11.2015	10:06:48	8.61625096	12.911	20.386	73.6	0.22	5.53
500	1	54°31.77 N	10°02.36 E	08.12.2015	10:11:04	7.771754443	8.161	23.228	318.2	0.43	4.52
500	5	54°31.77 N	10°02.36 E	08.12.2015	10:11:04	8.633903195	8.195	23.25	317.2	0.43	4.69
500	10	54°31.77 N	10°02.36 E	08.12.2015	10:11:04	8.763792288	8.374	23.496	309.9	0.44	5.23
500	15	54°31.77 N	10°02.36 E	08.12.2015	10:11:04	9.978250395	8.455	23.753	303.5	0.43	5.28
500	20	54°31.77 N	10°02.36 E	08.12.2015	10:11:04	9.990960064	8.817	24.374	291.7	0.35	4.59
500	25	54°31.77 N	10°02.36 E	08.12.2015	10:11:04	10.52952792	8.295	25.122	287.9	0.3	4.22
503	1	54°31.77 N	10°02.36 E	08.03.2016	10:04:56	13.50831729	3.578	20.644	411.1	0.12	0.03
503	5	54°31.77 N	10°02.36 E	08.03.2016	10:04:56	12.30642047	3.578	20.645	410.8	0.3	0.11
503	10	54°31.77 N	10°02.36 E	08.03.2016	10:04:56	11.98317108	3.58	20.642	374.7	0.31	4.09
503	15	54°31.77 N	10°02.36 E	08.03.2016	10:04:56	12.00940999	4.657	24.197	327.9	0.66	9.37
503	20	54°31.77 N	10°02.36 E	08.03.2016	10:04:56	13.95538268	4.669	24.158	294.1	0.63	9.33
503	25	54°31.77 N	10°02.36 E	08.03.2016	10:04:56	12.60122507	4.662	24.168	277.8	0.57	8.83
504	1	54°31.77 N	10°02.36 E	12.04.2016	09:46:11	14.61098697	6.225	17.078	366.6	0.03	0.25
504	5	54°31.77 N	10°02.36 E	12.04.2016	09:46:11	14.52977078	6.11	17.274	370.1	0.03	0.09

504	10	54°31.77 N	10°02.36 E	12.04.2016	09:46:11	15.18077436	5.581	18.313	382.2	0.02	0.06
504	15	54°31.77 N	10°02.36 E	12.04.2016	09:46:11	15.27109501	4.683	19.762	383.6	0.07	0.21
504	20	54°31.77 N	10°02.36 E	12.04.2016	09:46:11	16.55420599	4.152	21.264	300.3	0.71	3.32
504	25	54°31.77 N	10°02.36 E	12.04.2016	09:46:11	16.74793928	4.267	21.717	238.2	0.88	5.38
505	1	54°31.77 N	10°02.36 E	03.05.2016	09:40:37	13.6785316	9.47	15.188	347.4	0	0.08
505	5	54°31.77 N	10°02.36 E	03.05.2016	09:40:37	13.86085973	7.518	16.987	332.6	0	0.04
505	10	54°31.77 N	10°02.36 E	03.05.2016	09:40:37	14.3659804	6.731	20.112	326.6	0.01	0.06
505	15	54°31.77 N	10°02.36 E	03.05.2016	09:40:37	15.41067101	5.908	21.097	278.3	0.51	1.98
505	20	54°31.77 N	10°02.36 E	03.05.2016	09:40:37	16.14020279	5.87	21.866	266	0.72	3.6
505	25	54°31.77 N	10°02.36 E	03.05.2016	09:40:37	16.80537525	5.09	21.955	245.8	0.87	4.57
506	1	54°31.77 N	10°02.36 E	01.06.2016	09:48:23	9.030063846	16.228	13.653	303.6	0	0.14
506	5	54°31.77 N	10°02.36 E	01.06.2016	09:48:23	9.360917244	16.2	13.6	305.7	0	0.15
506	10	54°31.77 N	10°02.36 E	01.06.2016	09:48:23	11.10294416	11.325	16.2	327.5	0	0.15
506	15	54°31.77 N	10°02.36 E	01.06.2016	09:48:23	11.67085178	10.073	17.062	309.2	0	0.14
506	20	54°31.77 N	10°02.36 E	01.06.2016	09:48:23	12.77308782	7.067	19.567	270.3	0.02	0.27
506	25	54°31.77 N	10°02.36 E	01.06.2016	09:48:23	17.33733916	5.665	21.547	147.3	0.09	6.9
508	1	54°31.77 N	10°02.36 E	05.07.2016	09:50:35	8.854322803	17.746	13.609	293.4	0	0.07
508	5	54°31.77 N	10°02.36 E	05.07.2016	09:50:35	9.493988564	16.63	14.5	292.9	0	0.06
508	10	54°31.77 N	10°02.36 E	05.07.2016	09:50:35	11.76207185	12.905	17.557	264.4	0	0.07

508	15	54°31.77 N	10°02.36 E	05.07.2016	09:50:35	13.24466032	11.153	19.597	219.5	0.07	0.24
508	20	54°31.77 N	10°02.36 E	05.07.2016	09:50:35	15.77920473	8.268	20.861	148.4	0.07	5.08
508	25	54°31.77 N	10°02.36 E	05.07.2016	09:50:35	15.1789072	8.588	22.973	140.3	0.09	5.92
509	1	54°31.77 N	10°02.36 E	03.08.2016	09:39:54		19.032	15.978	271.4	0	0.08
509	5	54°31.77 N	10°02.36 E	03.08.2016	09:39:54		19.248	17.468	289.2	0	0.09
509	10	54°31.77 N	10°02.36 E	03.08.2016	09:39:54		15.541	20.018	277.8	0	0.08
509	15	54°31.77 N	10°02.36 E	03.08.2016	09:39:54		12.688	22.19	242.9	0	0.1
509	20	54°31.77 N	10°02.36 E	03.08.2016	09:39:54		10.639	23.861	160.6	0.01	0.27
509	25	54°31.77 N	10°02.36 E	03.08.2016	09:39:54		10.746	25.487	111.8	0.19	1.86
510	1	54°31.77 N	10°02.36 E	21.09.2016	10:37:05	9.968709241	17.406	14.587	280.9	0	0.22
510	5	54°31.77 N	10°02.36 E	21.09.2016	10:37:05	10.1499446	17.777	15.498	279.7	0	0.15
510	10	54°31.77 N	10°02.36 E	21.09.2016	10:37:05	10.17933056	17.968	16.432	268.8	0	0.15
510	15	54°31.77 N	10°02.36 E	21.09.2016	10:37:05	9.833734749	18.628	17.738	261.7	0	0.15
510	20	54°31.77 N	10°02.36 E	21.09.2016	10:37:05	9.888524344	17.839	19.953	219	0	0.15
510	25	54°31.77 N	10°02.36 E	21.09.2016	10:37:05	2.146954365	11.32	25.366	0	0	0.13
511	1	54°31.77 N	10°02.36 E	19.10.2016	10:21:13	6.119216502	12.274	16.328	307.1	0	0
511	5	54°31.77 N	10°02.36 E	19.10.2016	10:21:13	5.87915901	12.285	16.334	305.3	0	0.02
511	10	54°31.77 N	10°02.36 E	19.10.2016	10:21:13	7.27332795	12.355	16.585	277	0.01	0.1
511	15	54°31.77 N	10°02.36 E	19.10.2016	10:21:13	6.555879723	13.382	17.697	255.2	0.08	0.34

511	20	54°31.77 N	10°02.36 E	19.10.2016	10:21:13	5.244062408	14.784	21.532	96.2	0.58	1.58
511	25	54°31.77 N	10°02.36 E	19.10.2016	10:21:13	5.493895348	12.253	24.846	0	0.08	0.14
512	1	54°31.77 N	10°02.36 E	08.11.2016	10:02:27	6.889549874	9.533	15.168	309.3	0.06	0.01
512	5	54°31.77 N	10°02.36 E	08.11.2016	10:02:27	6.967803196	9.549	15.164	308.9	0.04	0.02
512	10	54°31.77 N	10°02.36 E	08.11.2016	10:02:27	9.175603521	9.565	15.169	308.9	0.04	0.03
512	15	54°31.77 N	10°02.36 E	08.11.2016	10:02:27	6.959702936	9.566	15.171	308.9	0.04	0.06
512	20	54°31.77 N	10°02.36 E	08.11.2016	10:02:27	7.109401032	9.796	15.454	301.8	0.04	0.09
512	25	54°31.77 N	10°02.36 E	08.11.2016	10:02:27	6.635359921	12.171	22.248	0	0.42	1.12
513	1	54°31.77 N	10°02.36 E	06.12.2016	09:54:39	6.822491396	6.258	16.519	341.1	0.02	0.04
513	5	54°31.77 N	10°02.36 E	06.12.2016	09:54:39	5.903748442	6.259	16.523	341	0.02	0.01
513	10	54°31.77 N	10°02.36 E	06.12.2016	09:54:39	6.191312577	6.272	16.55	339.5	0.03	0.06
513	15	54°31.77 N	10°02.36 E	06.12.2016	09:54:39	6.513092552	6.483	16.691	311.5	0.07	0.4
513	20	54°31.77 N	10°02.36 E	06.12.2016	09:54:39	6.791885461	8.219	19.665	194.7	0.32	2.11
513	25	54°31.77 N	10°02.36 E	06.12.2016	09:54:39	7.646939962	10.173	20.572	98.1	0.65	2.51
514	1	54°31.77 N	10°02.36 E	10.01.2017	09:57:46	9.041669563	4.327	21.059	345.4	0.02	0.01
514	5	54°31.77 N	10°02.36 E	10.01.2017	09:57:46	9.177983056	4.333	21.061	345.1	0.02	0.1
514	10	54°31.77 N	10°02.36 E	10.01.2017	09:57:46	8.46147916	4.423	21.124	340.9	0.03	0.31
514	15	54°31.77 N	10°02.36 E	10.01.2017	09:57:46	8.368859371	5.607	22.134	301.7	0.09	0.82
514	20	54°31.77 N	10°02.36 E	10.01.2017	09:57:46	8.071092811	5.457	23.211	299.8	0.54	2.91

514	25	54°31.77 N	10°02.36 E	10.01.2017	09:57:46	9.239491029	5.3	23.7	304.6	0.28	1.2
516	1	54°31.77 N	10°02.36 E	13.03.2017	10:26:42	9.542190746	3.749	16.357	410.7	0.07	0.01
516	5	54°31.77 N	10°02.36 E	13.03.2017	10:26:42	10.19027286	3.623	16.747	393.2	0.1	0.07
516	10	54°31.77 N	10°02.36 E	13.03.2017	10:26:42	10.04812171	2.939	19.271	344.9	0.35	4.02
516	15	54°31.77 N	10°02.36 E	13.03.2017	10:26:42	11.11926152	3.012	20.041	325.4	0.38	4.5
516	20	54°31.77 N	10°02.36 E	13.03.2017	10:26:42	10.87916975	3.23	20.43	322.4	0.33	4.27
516	25	54°31.77 N	10°02.36 E	13.03.2017	10:26:42	13.9339288	3.257	20.618	318.5	0.35	4.3
517	1	54°31.77 N	10°02.36 E	10.04.2017	10:35:37	8.938131852	7.153	16.821	350.2	0.05	0.01
517	5	54°31.77 N	10°02.36 E	10.04.2017	10:35:37	8.547087455	7.153	16.82	350.64	0.07	0.03
517	10	54°31.77 N	10°02.36 E	10.04.2017	10:35:37	8.816543654	7.143	16.821	348.39	0.08	0.76
517	15	54°31.77 N	10°02.36 E	10.04.2017	10:35:37	10.37617188	6.2	17.283	328.49	0.12	1.29
517	20	54°31.77 N	10°02.36 E	10.04.2017	10:35:37	10.49193686	3.467	20.024	268.13	0.3	4.78
517	25	54°31.77 N	10°02.36 E	10.04.2017	10:35:37	12.51335735	3.474	20.187	261.08	0.23	5.05
519	1	54°31.77 N	10°02.36 E	21.06.2017	10:16:02	10.92599046	17.35	16.098	294.4	0.06	1.04
519	5	54°31.77 N	10°02.36 E	21.06.2017	10:16:02	11.70436928	17.284	16.256	295.59	0.07	1.85
519	10	54°31.77 N	10°02.36 E	21.06.2017	10:16:02	12.65511503	14.563	16.944	299.07	0.06	2.66
519	15	54°31.77 N	10°02.36 E	21.06.2017	10:16:02	13.24292187	12.998	17.535	276.58	0.18	3.78
519	20	54°31.77 N	10°02.36 E	21.06.2017	10:16:02	16.21536787	8.977	19.134	183.53	1	9.58
519	25	54°31.77 N	10°02.36 E	21.06.2017	10:16:02	17.71534508	8.567	20.372	137.58	0.31	12.18

520	1	54°31.77 N	10°02.36 E	17.07.2017	10:50:00	9.533047828	16.968	16.385	280.36	0.04	6.58
520	5	54°31.77 N	10°02.36 E	17.07.2017	10:50:00	9.744741176	16.943	16.399	278.33	0	8.01
520	10	54°31.77 N	10°02.36 E	17.07.2017	10:50:00	12.38792453	15.639	17.579	247.64	0.03	8.96
520	15	54°31.77 N	10°02.36 E	17.07.2017	10:50:00	14.16502283	12.621	20.568	169.23	0.15	10.53
520	20	54°31.77 N	10°02.36 E	17.07.2017	10:50:00	14.3679753	11.623	21.862	128.24	0.55	15.58
520	25	54°31.77 N	10°02.36 E	17.07.2017	10:50:00	15.87362878	10.763	22.333	91.01	0.54	17.92
521	1	54°31.77 N	10°02.36 E	01.08.2017	09:58:53	10.12922826	18.712	14.938	278.36	0.02	0.02
521	5	54°31.77 N	10°02.36 E	01.08.2017	09:58:53	11.07	18.402	16.232	277.01	0.01	0.03
521	10	54°31.77 N	10°02.36 E	01.08.2017	09:58:53	10.32646383	17.223	17.193	254.6	0.01	0.1
521	15	54°31.77 N	10°02.36 E	01.08.2017	09:58:53	13.76	15.215	19.105	209.44	0.01	0.11
521	20	54°31.77 N	10°02.36 E	01.08.2017	09:58:53	13.74612202	12.796	20.72	145.42	0.06	0.36
521	25	54°31.77 N	10°02.36 E	01.08.2017	09:58:53	14.73806811	10.808	22.028	53.1	0.61	4.71
522	1	54°31.77 N	10°02.36 E	12.09.2017	09:55:48	9.067516386	15.001	20.119	146.8	0.02	0.28
522	5	54°31.77 N	10°02.36 E	12.09.2017	09:55:48	8.832308671	14.968	20.133	135.92	0.01	0.33
522	10	54°31.77 N	10°02.36 E	12.09.2017	09:55:48	8.220801321	14.207	21.274	55.04	0.06	0.42
522	15	54°31.77 N	10°02.36 E	12.09.2017	09:55:48	9.838427412	13.547	22.225	24.61	0.23	1.04
522	20	54°31.77 N	10°02.36 E	12.09.2017	09:55:48	9.981064103	13.612	22.278	27.98	0.24	1.22
522	25	54°31.77 N	10°02.36 E	12.09.2017	09:55:48	9.557144944	13.532	22.77	28.64	0.35	2.06
523	1	54°31.77 N	10°02.36 E	24.10.2017	10:43:32	10.84227438	13.184	17.988	267.67	0.12	0.02

523	5	54°31.77 N	10°02.36 E	24.10.2017	10:43:32	10.53213244	13.185	17.99	258.71	0.17	0.03
523	10	54°31.77 N	10°02.36 E	24.10.2017	10:43:32	10.16654524	13.185	17.992	187.22	0.22	0.11
523	15	54°31.77 N	10°02.36 E	24.10.2017	10:43:32	10.05492629	13.188	22.114	164.67	0.34	1.62
523	20	54°31.77 N	10°02.36 E	24.10.2017	10:43:32	9.858401259	13.19	22.114	152.52	0.22	0.93
523	25	54°31.77 N	10°02.36 E	24.10.2017	10:43:32	10.19879532	13.192	22.111	172.33	0.22	0.87
524	1	54°31.77 N	10°02.36 E	09.11.2017	10:36:59	35.59665908	11.106	18.367	305.82	0	0.02
524	5	54°31.77 N	10°02.36 E	09.11.2017	10:36:59	37.82565787	11.104	18.369	300.24	0	0.08
524	10	54°31.77 N	10°02.36 E	09.11.2017	10:36:59	34.89039037	11.103	18.366	294.15	0	0.1
524	15	54°31.77 N	10°02.36 E	09.11.2017	10:36:59	36.22026741	13.126	21.461	243.63	0.04	0.2
524	20	54°31.77 N	10°02.36 E	09.11.2017	10:36:59	33.89980546	13.128	21.46	165.12	0.41	1.47
524	25	54°31.77 N	10°02.36 E	09.11.2017	10:36:59	33.75445882	13.125	21.458	100.72	0.89	2.74
525	1	54°31.77 N	10°02.36 E	19.12.2017	10:05:58	11.76287194	5.766	19.538	331.6	0.28	1.3
525	5	54°31.77 N	10°02.36 E	19.12.2017	10:05:58	12.96343516	5.767	19.535	332	0.28	1.35
525	10	54°31.77 N	10°02.36 E	19.12.2017	10:05:58	12.89773412	5.572	19.569	331.52	0.32	1.97
525	15	54°31.77 N	10°02.36 E	19.12.2017	10:05:58	13.06728152	5.63	19.617	329.77	0.35	2.28
525	20	54°31.77 N	10°02.36 E	19.12.2017	10:05:58	11.6778542	5.844	19.692	320.67	0.45	2.83
525	25	54°31.77 N	10°02.36 E	19.12.2017	10:05:58	11.96373705	6.446	19.84	305.26	0.55	3.49
526	1	54°31.77 N	10°02.36 E	10.012018	10:05:03				345.77	0.32	3.57
526	5	54°31.77 N	10°02.36 E	10.012018	10:05:03				345.79	0.31	3.33

526	10	54°31.77 N	10°02.36 E	10.012018	10:05:03				345.59	0.32	3.25
526	15	54°31.77 N	10°02.36 E	10.012018	10:05:03				345.15	0.32	2.91
526	20	54°31.77 N	10°02.36 E	10.012018	10:05:03				344.44	0.33	2.94
526	25	54°31.77 N	10°02.36 E	10.012018	10:05:03				343.81	0.33	2.97
527	1	54°31.77 N	10°02.36 E	20.02.2018	12:01:42				393.2129	0.55	3.99
527	5	54°31.77 N	10°02.36 E	20.02.2018	12:01:42				388.9269	0.54	4.22
527	10	54°31.77 N	10°02.36 E	20.02.2018	12:01:42				366.7987	0.56	4.99
527	15	54°31.77 N	10°02.36 E	20.02.2018	12:01:42				354.4344	0.61	5.49
527	20	54°31.77 N	10°02.36 E	20.02.2018	12:01:42				319.4442	0.65	5.65
527	25	54°31.77 N	10°02.36 E	20.02.2018	12:01:42				294.3595	0.66	6.13
528	1	54°31.77 N	10°02.36 E	26.03.2018	09:53:23	16.36015508	1.815	13.532	426.88	0.11	0.27
528	5	54°31.77 N	10°02.36 E	26.03.2018	09:53:23	16.92950998	1.807	13.532	426.99	0.1	0.24
528	10	54°31.77 N	10°02.36 E	26.03.2018	09:53:23	16.8797354	1.804	13.526	421.55	0.1	0.61
528	15	54°31.77 N	10°02.36 E	26.03.2018	09:53:23	17.2158116	1.39	13.628	416.27	0.11	1.11
528	20	54°31.77 N	10°02.36 E	26.03.2018	09:53:23	16.92045529	1.22	13.854	405.9	0.13	1.17
528	25	54°31.77 N	10°02.36 E	26.03.2018	09:53:23	17.20107283	1.072	14.108	398.37	0.15	1.27
529	1	54°31.77 N	10°02.36 E	18.04.2018	09:55:01				406.79	0.06	0.03
529	5	54°31.77 N	10°02.36 E	18.04.2018	09:55:01				401.96	0.05	0.04
529	10	54°31.77 N	10°02.36 E	18.04.2018	09:55:01				390.42	0.05	0.09

529	15	54°31.77 N	10°02.36 E	18.04.2018	09:55:01				391.67	0.04	0.06
529	20	54°31.77 N	10°02.36 E	18.04.2018	09:55:01				388.26	0.04	0.07
529	25	54°31.77 N	10°02.36 E	18.04.2018	09:55:01				384.18	0.04	0.09
530	1	54°31.77 N	10°02.36 E	08.05.2018	10:08:43				369.1823	0.03	0.01
530	5	54°31.77 N	10°02.36 E	08.05.2018	10:08:43				371.8199	0.03	0.04
530	10	54°31.77 N	10°02.36 E	08.05.2018	10:08:43				359.3933	0.03	0.02
530	15	54°31.77 N	10°02.36 E	08.05.2018	10:08:43				324.1635	0.04	0.17
530	20	54°31.77 N	10°02.36 E	08.05.2018	10:08:43				305.6089	0.06	0.53
530	25	54°31.77 N	10°02.36 E	08.05.2018	10:08:43				286.4351	0.07	0.96
531	1	54°31.77 N	10°02.36 E	21.06.2018	10:16:12				294.2	0.04	0.03
531	5	54°31.77 N	10°02.36 E	21.06.2018	10:16:12				288.18	0.04	0.01
531	10	54°31.77 N	10°02.36 E	21.06.2018	10:16:12				225.07	0.07	0.18
531	15	54°31.77 N	10°02.36 E	21.06.2018	10:16:12				228.13	0.14	1.06
531	20	54°31.77 N	10°02.36 E	21.06.2018	10:16:12				217.76	0.17	1.89
531	25	54°31.77 N	10°02.36 E	21.06.2018	10:16:12				187.03	0.2	3.33
533	1	54°31.77 N	10°02.36 E	01.08.2018	10:16:39	11.24111396	21.761	15.453	264.13	0.08	0.09
533	5	54°31.77 N	10°02.36 E	01.08.2018	10:16:39	10.85883851	21.772	15.434	280.3	0.09	0.02
533	10	54°31.77 N	10°02.36 E	01.08.2018	10:16:39	11.75029295	21.757	15.439	295.66	0.11	0.04
533	15	54°31.77 N	10°02.36 E	01.08.2018	10:16:39	11.56237969	10.469	24.254	297.61	0.15	0.03

533	20	54°31.77 N	10°02.36 E	01.08.2018	10:16:39	11.46887213	10.458	24.312	192.87	0.15	0.03			
533	25	54°31.77 N	10°02.36 E	01.08.2018	10:16:39	7.677135489	10.483	24.244	67.36	0.22	0.41			
539	1	54°31.77 N	10°02.36 E	26.02.2019	10:09:01	15.95786294	3.76833 3	18.395	400.29	0.04	0.02	-27.1177	9.71786 3	184.78
539	5	54°31.77 N	10°02.36 E	26.02.2019	10:09:01	16.92261254	3.763	18.7873 3	387.24	0.06	0.17	-15.2703	8.07261 3	197.02
539	10	54°31.77 N	10°02.36 E	26.02.2019	10:09:01	15.06008152	3.70233 3	19.6366 7	354.67	0.19	1.83	15.0552 5	9.20008 2	176.09
539	15	54°31.77 N	10°02.36 E	26.02.2019	10:09:01	14.77935386	3.68166 7	19.9406 7	338.94	0.27	2.73	29.8820 2	9.04935 4	173.64
539	20	54°31.77 N	10°02.36 E	26.02.2019	10:09:01	17.6949908	4.31766 7	21.5183 3	282.45	0.44	4.3	75.6559	10.8649 9	209.63
539	25	54°31.77 N	10°02.36 E	26.02.2019	10:09:01	18.95002285	4.61066 7	21.9503 3	249.83	0.58	4.74	103.993 8	11.6600 2	225.70
540	1	54°31.77 N	10°02.36 E	20.03.2019	9:53:38	9.306010249	4.772	19.552	367.41	0.03	0.03	-6.74842	5.79601	115.07
540	5	54°31.77 N	10°02.36 E	20.03.2019	9:53:38	9.025601019	4.76966 7	19.5516 7	367.07	0.02	0.02	-6.39491	5.62560 1	111.61
540	10	54°31.77 N	10°02.36 E	20.03.2019	9:53:38	8.743894057	4.74866 7	19.6583 3	355.73	0.02	0.19	4.62332 4	5.45389 4	108.51
540	15	54°31.77 N	10°02.36 E	20.03.2019	9:53:38	8.778630137	4.73	19.87	346.7	0.08	1.45	13.1170 6	5.46863	108.73
540	20	54°31.77 N	10°02.36 E	20.03.2019	9:53:38	9.590284267	4.63166 7	20.282	324.31	0.23	3.08	34.8957 4	3.98028 4	119.40
540	25	54°31.77 N	10°02.36 E	20.03.2019	9:53:38	8.836097878	4.929	21.606	276.28	0.22	2.25	76.2106 6	5.53609 8	110.77
541	1	54°31.77 N	10°02.36 E	24.04.2019	10:43:49	14.1066901	8.7805	16.6085	342.56	0.04	0.05	-8.50591	8.71669	171.15
541	5	54°31.77 N	10°02.36 E	24.04.2019	10:43:49	13.92266628	8.63	16.7906 7	344.36	0.03	0.09	-9.50723	8.62266 6	169.74
541	10	54°31.77 N	10°02.36 E	24.04.2019	10:43:49	14.62565406	8.458	17.2415	343.56	0.01	0.03	-8.36623	9.06565 4	178.57
541	15	54°31.77 N	10°02.36 E	24.04.2019	10:43:49	15.32092314	7.357	18.8825	345.11	0.01	0.03	-4.86176	9.53092 3	189.24
541	20	54°31.77 N	10°02.36 E	24.04.2019	10:43:49	14.27625416	6.93	19.2916 7	325.63	0.03	0.07	16.6729	8.89625 4	176.76

541	25	54°31.77 N	10°02.36 E	24.04.2019	10:43:49	12.94691169	6.120333	20.714	197.27	0.17	0.99	145.54	8.246912	162.01
542	1	54°31.77 N	10°02.36 E	28.05.2019	10:24:20	15.32864803	12.1205	14.7205	326.4882	0.06	0.03	-12.8248	9.528648	188.34
542	5	54°31.77 N	10°02.36 E	28.05.2019	10:24:20	9.314443648	11.703	14.9126 7	326.7035	0.04	0.01	-10.5793	5.824444	118.10
542	10	54°31.77 N	10°02.36 E	28.05.2019	10:24:20	3.92762286	10.184	15.879	313.1162	0.03	0.01	11.4277 1	2.467623	50.25
542	15	54°31.77 N	10°02.36 E	28.05.2019	10:24:20	4.753996766	8.611	18.2483 3	258.5718	0.04	0.09	71.4418 9	3.003997	61.53
542	20	54°31.77 N	10°02.36 E	28.05.2019	10:24:20	7.605920763	7.8515	19.128	200.4099	0.16	0.76	132.214 1	4.815921	98.85
542	25	54°31.77 N	10°02.36 E	28.05.2019	10:24:20	6.577816541	7.2735	19.717	149.1031	0.26	1.72	185.592 2	4.167817	85.73
543	1	54°31.77 N	10°02.36 E	26.06.2019	11:24:30	7.477172123	19.4276 7	14.5003 3	304.83	0.04	0.02	-34.1456	4.687172	94.35
543	5	54°31.77 N	10°02.36 E	26.06.2019	11:24:30	7.902255134	17.608	14.72	293.62	0.05	0.11	-13.9238	4.952255	100.10
543	10	54°31.77 N	10°02.36 E	26.06.2019	11:24:30	8.508716551	13.8654 7	16.2676 7	260.03	0.03	0.13	38.0111 4	5.358717	109.05
543	15	54°31.77 N	10°02.36 E	26.06.2019	11:24:30	9.233732505	12.6043 3	16.799	250.31	0.05	0.2	54.5264 7	5.823733	118.64
543	20	54°31.77 N	10°02.36 E	26.06.2019	11:24:30	12.78216757	9.229667	18.816	150.65	0.21	1.09	171.193	8.092168	166.00
543	25	54°31.77 N	10°02.36 E	26.06.2019	11:24:30	8.506396679	8.221	19.7713 3	116.48	0.2	1.78	210.090 8	5.396397	111.30
544	1	54°31.77 N	10°02.36 E	31.07.2019	10:10:16	5.895659485	19.553	14.3713 3	269.6	0.0095	0.059	-0.14772	3.655659	70.59
544	5	54°31.77 N	10°02.36 E	31.07.2019	10:10:16	5.695971421	18.6903 3	16.268	264.23	0.0465	0.047	6.57561 2	3.565971	71.22
544	10	54°31.77 N	10°02.36 E	31.07.2019	10:10:16	6.772185546	18.5913 3	16.747	261.54	0.0985	0.017	8.96592 4	4.232186	85.18
544	15	54°31.77 N	10°02.36 E	31.07.2019	10:10:16	6.30801822	17.4663 3	17.376	227.51	0.0945	0.066	47.1570 3	3.958018	79.84
544	20	54°31.77 N	10°02.36 E	31.07.2019	10:10:16	6.45767765	11.465	20.827	84.07	0.1005	-0.024	216.914 5	4.077678	83.18
544	25	54°31.77 N	10°02.36E		10:10:16		9.69	21.55	46.35	0.1695	-0.007	264.386		

545	1	54°31.77 N	10°02.36 E	27.08.2019	10:39:15	4.952470226	19.813	15.748	274.576	0.0885	0.066	-8.44365	3.11247	63.17
545	5	54°31.77 N	10°02.36 E	27.08.2019	10:39:15	6.182039412	17.8253	17.931	247.040 2	0.0935	-0.026	25.2689 8	3.90203 9	79.69
545	10	54°31.77 N	10°02.36 E	27.08.2019	10:39:15	7.881891733	15.2513 3	20.2543 3	145.466	0.0375	-0.026	134.836	5.00189 2	103.21
545	15	54°31.77 N	10°02.36 E	27.08.2019	10:39:15	6.164194868	13.44	21.1003 3	54.7284 3	0.0685	-0.045	232.684 3	3.92419 5	81.32
545	20	54°31.77 N	10°02.36 E	27.08.2019	10:39:15		13.45	22.09	74.2306 9	0.1345	-0.038	211.818		
545	25	54°31.77 N	10°02.36 E	27.08.2019	10:39:15		12.94	22.43	36.5957 6	0.1365	-0.04	251.085 6		
547	1	54°31.77 N	10°02.36E		10:39:15		9.49	20.1	292.737 1	0.23533 3	1.2	27.8309 5		
547	5	54°31.77 N	10°02.36 E	29.09.2019	9:52:02	11.34248256	9.58233 3	20.1966 7	286.755 5	0.35733 3	1.74	32.8284 7	6.99248 3	136.43
547	10	54°31.77 N	10°02.36 E	29.09.2019	9:52:02	24.45404717	10.2193 3	20.7193 3	269.158 3	0.41566 7	1.9	44.5491 7	15.1040 5	295.02
547	15	54°31.77 N	10°02.36 E	29.09.2019	9:52:02	13.39096034	10.1413 3	20.6713 3	249.335 6	0.40366 7	2.669	64.5574 8	8.27096	162.02
547	20	54°31.77 N	10°02.36E		9:52:02		11.65	21.66	122.569 5	0.221	6.77266 7	176.524 8		
547	25	54°31.77 N	10°02.36E		9:52:02		12.56	22.44	56.7556 9	0.30233 3	8.49	233.691 7		
548	1	54°31.77 N	10°02.36 E	10.12.2019	10:02:23	10.22583688			322.719	0.299	1.20566 7	141.478 4	6.29583 7	123.35
548	5	54°31.77 N	10°02.36 E	10.12.2019	10:02:23	9.602935366			307.252 9	0.43966 7	2.04666 7	156.596 7	5.91293 5	116.19
548	10	54°31.77 N	10°02.36 E	10.12.2019	10:02:23	12.52260708			291.240 3	0.558	2.87433 3	172.249 2	7.71260 7	151.52
548	15	54°31.77 N	10°02.36E		10:02:23				268.091 8	0.53966 7	3.36066 7	194.877 4		
548	20	54°31.77 N	10°02.36 E	10.12.2019	10:02:23	9.79400887			255.875 6	0.44633 3	3.85366 7	206.818 9	6.04400 9	118.87
548	25	54°31.77 N	10°02.36 E	10.12.2019	10:02:23	7.727946126			263.585 5	0.268	3.73233 3	199.282 3	4.72794 6	93.79
549	1	54°31.77 N	10°02.36 E	07.01.2020	9:40:11	14.77808548	5.81633 3	20.3053 3	322.073 9	0.262	4.11166 7	26.9551 9	9.16808 5	180.17

549	5	54°31.77 N	10°02.36 E	07.01.2020	9:40:11	17.86916426	5.912333	20.37767	318.6652	0.265667	4.146333	29.33093	11.08916	217.87
549	10	54°31.77 N	10°02.36 E	07.01.2020	9:40:11	14.93169105	5.967333	20.454	313.9873	0.271667	4.174333	33.27957	9.281691	182.68
549	15	54°31.77 N	10°02.36 E	07.01.2020	9:40:11	14.1725595	7.166667	21.40633	270.2403	0.330333	4.950333	64.38348	8.782559	174.79
549	20	54°31.77 N	10°02.36 E	07.01.2020	9:40:11	17.57156619	8.069333	22.61967	216.5111	0.261333	4.900333	107.5277	10.90157	213.29
549	25	54°31.77 N	10°02.36 E	07.01.2020	9:40:11	14.2606891	8.313333	23.00433	200.5433	0.228667	4.505	120.5584	8.880689	175.14
557	1	54°31.77 N	10°02.36 E	15.09.2020	7:41:17		16.09	16.51	268.7125	0.021	0	15.90507		
557	5	54°31.77 N	10°02.36 E	15.09.2020	7:41:17		15.85	17.08	219.8145	0.026	0	64.10834		
557	10	54°31.77 N	10°02.36 E	15.09.2020	7:41:17		14.51	19.81	54.56592	0.084	0.07	228.7285		
557	15	54°31.77 N	10°02.36 E	15.09.2020	7:41:17	5.646546154	13.6975	20.4965	6.59929	0.462	0.807	279.2441	3.526546	69.76
557	20	54°31.77 N	10°02.36 E	15.09.2020	7:41:17	7.926579465	13.084	21.22067	0	0.378	1.154	288.1329	4.926579	98.89
557	25	54°31.77 N	10°02.36 E	15.09.2020	7:41:17	9.11411063	13.06333	21.34967	0	0.391	1.87	288.0292	5.714111	113.80
558	1	54°31.77 N	10°02.36 E	16.10.2020	8:12:09	8.954984433	12.85533	16.144				298.8042	5.564984	109.54
558	5	54°31.77 N	10°02.36 E	16.10.2020	8:12:09	8.086846091	13.03167	16.39567				297.2071	5.026846	99.07
558	10	54°31.77 N	10°02.36 E	16.10.2020	8:12:09	6.079043947	13.242	16.5925				295.5085	3.779044	74.53
558	15	54°31.77 N	10°02.36E		8:12:09		13.2	16.64				295.6875		
558	20	54°31.77 N	10°02.36E		8:12:09		13.08	16.97				295.8438		
558	25	54°31.77 N	10°02.36E		8:12:09		13.75	18.97				288.0751		
559	1	54°31.77 N	10°02.36 E	17.02.2021	9:23:33	15.10588165	1.462	17.83667	375.8893	0.5425	4.667	20.59513	9.385882	184.32
559	5	54°31.77 N	10°02.36 E	17.02.2021	9:23:33	16.31100277	1.744667	18.01833	367.8677	0.5345	4.991	25.07405	10.14103	199.23

559	10	54°31.77 N	10°02.36 E	17.02.2021	9:23:33	15.91803353	1.736	18.281	361.2598	0.5585	5.294	30.93012	9.908034	195.32
559	15	54°31.77 N	10°02.36 E	17.02.2021	9:23:33	15.80257901	1.77733	18.31167	363.2213	0.5645	5.355	28.51562	9.822579	192.71
559	20	54°31.77 N	10°02.36 E	17.02.2021	9:23:33	16.95489636	1.65	18.3053	363.0367	0.5915	5.428	29.99917	10.54494	207.39
559	25	54°31.77 N	10°02.36 E	17.02.2021	9:23:33	14.80424019	1.43666 7	18.386	365.0512	0.6485	5.73	29.98816	9.244244	188.60
560	1	54°31.77 N	10°02.36 E	16.03.2021	9:18:53	15.60033394	3.01	17.808	385.4709	0.0315	0.073	-4.04945	9.820334	198.05
560	5	54°31.77 N	10°02.36E		9:18:53		2.94	17.84	381.9183	0.0545	0.659	0.01405		
560	10	54°31.77 N	10°02.36 E	16.03.2021	9:18:53	15.9856244	2.968	17.932	364.7262	0.0525	0.767	16.31867	10.06562	203.07
560	15	54°31.77 N	10°02.36 E	16.03.2021	9:18:53	16.83253463	2.952	17.956	377.1755	0.0645	1.138	4.242121	10.60253	213.86
560	20	54°31.77 N	10°02.36 E	16.03.2021	9:18:53	16.52590273	2.797	18.911	345.2768	0.1365	2.099	34.50059	10.43599	211.64
560	25	54°31.77 N	10°02.36 E	16.03.2021	9:18:53	16.76341329	3.201	19.9	333.3814	0.1405	2.229	39.84625	10.61341	215.77
561	1	54°31.77 N	10°02.36 E	17.04.2021	7:58:18	14.15598419	4.729	17.95367	352.3189	0.076	0.192	12.15237	8.885984	178.11
561	5	54°31.77 N	10°02.36 E	17.04.2021	7:58:18	14.70900298	4.729	17.95267	350.0529	0.04	0.152	14.36983	9.239003	185.06
561	10	54°31.77 N	10°02.36 E	17.04.2021	7:58:18	14.55489856	4.71066 7	17.9593 3	348.6026	0.04	0.163	15.93441	9.154899	183.69
561	15	54°31.77 N	10°02.36 E	17.04.2021	7:58:18	14.91476149	4.68666 7	18.13967	321.9756	0.044	0.166	41.74753	9.384761	188.92
561	20	54°31.77 N	10°02.36 E	17.04.2021	7:58:18	15.2130149	4.23433 3	21.21633	261.6374	0.079	0.218	97.44294	9.633015	195.81
561	25	54°31.77 N	10°02.36 E	17.04.2021	7:58:18	14.47883099	4.21166 7	21.36167	256.8469	0.195	0.345	101.9818	9.178831	186.53
562	1	54°31.77 N	10°02.36 E	26.05.2021	9:54:48	12.15692024	8.89533 3	18.494	314.0261	0.028	0	14.60513	7.676923	155.30
562	5	54°31.77 N	10°02.36 E	26.05.2021	9:54:48	12.41896772	8.82366 7	18.52233	312.9599	0.015	0	16.12009	7.848968	159.14
562	10	54°31.77 N	10°02.36 E	26.05.2021	9:54:48	12.81155766	8.289	18.85667	305.8929	0.017	0	26.33892	8.111558	164.47

562	15	54°31.77 N	10°02.36 E	26.05.2021	9:54:48	13.75582808	7.41	19.7593	290.2906	0.03	0.003	46.4219 1	8.73582 8	178.70
562	20	54°31.77 N	10°02.36 E	26.05.2021	9:54:48	14.62578874	6.122	21.3616 7	211.902 6	0.262	1.176	129.786	9.32578 9	192.50
562	25	54°31.77 N	10°02.36 E	26.05.2021	9:54:48	14.66977195	5.94666 7	21.8696 7	180.137 6	0.29	1.182	161.133 6	9.39977 2	194.25
563	1	54°31.77 N	10°02.36 E	09.06.2021	10:43:50	11.38436494	15.5126 7	14.6656 7	314.506 7	0.021	0	-22.3667	7.11436 5	141.45
563	5	54°31.77 N	10°02.36 E	09.06.2021	10:43:50	11.3981017	15.173	15.8473 3	313.742 8	0.021	0	-21.664	7.12810 2	142.46
563	10	54°31.77 N	10°02.36 E	09.06.2021	10:43:50	12.10222175	15.102	16.1073 3	314.002 9	0.049	0	-21.9499	7.57222 2	150.98
563	15	54°31.77 N	10°02.36 E	09.06.2021	10:43:50	13.32712998	11.2153 3	17.318	306.319 7	0.034	0.008	8.01418 4	8.36713	167.91
563	20	54°31.77 N	10°02.36 E	09.06.2021	10:43:50	14.9790296	8.93233 3	19.0023 3	259.517 9	0.09	0.1	66.5681 2	9.43903	190.77
563	25	54°31.77 N	10°02.36 E	09.06.2021	10:43:50	15.6628487	6.44433 3	21.2966 7	171.543 7	0.251	1.031	166.785 8	9.93284 9	202.10
564	1	54°31.77 N	10°02.36 E	20.07.2021	9:57:53	8.812450474	21.421	12.145	82.9381 5	0.164	-0.002	176.401 1	5.48245	108.11
564	5	54°31.77 N	10°02.36 E	20.07.2021	9:57:53	9.184741947	21.429	12.22	122.507 8	0.431	0	137.57	5.71474 2	112.72
564	10	54°31.77 N	10°02.36 E	20.07.2021	9:57:53	9.56293888	21.015	12.695	284.834 5	0.061	0	-19.7962	5.95293 9	117.65
564	15	54°31.77 N	10°02.36 E	20.07.2021	9:57:53	12.13165873	14.075	16.623	271.760 9	0.172	0.026	24.6168 6	7.61165 9	152.75
564	20	54°31.77 N	10°02.36 E	20.07.2021	9:57:53	15.66918606	9.063	20.361	252.439 6	0.232	1.103	69.7615 2	9.89918 6	201.11
564	25	54°31.77 N	10°02.36 E	20.07.2021	9:57:53	16.189562	8.534	21.162	265.815 6	0.799	2.9	58.9072 6	10.2495 6	208.64
567	1	54°31.77 N	10°02.36 E	01.09.2021	10:09:53	11.27781539	17.056	15.979	269.935 4	0.048	0	10.1903	7.05781 5	140.49
567	5	54°31.77 N	10°02.36 E	01.09.2021	10:09:53	13.12036491	16.988	15.978	263.373 6	0.032	0	16.9811 6	8.21036 5	163.44
567	10	54°31.77 N	10°02.36 E	01.09.2021	10:09:53	12.97512573	16.666	16.161	232.523 1	0.094	0.092	48.6220 8	8.12512 6	162.28
567	15	54°31.77 N	10°02.36 E	01.09.2021	10:09:53	15.70302967	12.547	22.082	105.663 1	0.56	0.807	186.608 6	9.95303	202.45

567	20	54°31.77 N	10°02.36 E	01.09.2021	10:09:53	27.41673295	11.939	22.654	32.05621	0.444	1.154	261.3277	17.41673	355.59
567	25	54°31.77 N	10°02.36 E	01.09.2021	10:09:53	17.90115951	11.112	23.319	0	0.391	1.95	296.7303	11.39116	233.68
568	1	54°31.77 N	10°02.36 E	06.10.2021	10:00:46	9.238545851	14.675	17.205	271.5153	0.048	0	20.20518	5.808546	116.48
568	5	54°31.77 N	10°02.36 E	06.10.2021	10:00:14	9.480442011	14.857	18.08	263.5921	0.032	0	25.35361	5.970442	120.07
568	10	54°31.77 N	10°02.36 E	06.10.2021	9:59:43	9.667611964	14.705	18.599	247.0383	0.094	0.092	41.53117	6.087612	122.77
568	15	54°31.77 N	10°02.36 E	06.10.2021	9:59:10	10.35719236	14.561	20.81	223.8768	0.56	0.807	61.20711	6.557192	133.43
568	20	54°31.77 N	10°02.36 E	06.10.2021	9:58:09	8.544015514	13.285	22.089	158.4062	0.444	1.154	130.5278	5.424016	110.79
568	25	54°31.77 N	10°02.36 E	06.10.2021	9:57:39	7.626426552	12.747	22.386	101.7463	0.391	0.095	188.6587	4.836427	98.74
569	1	54°31.77 N	10°02.36 E	03.11.2021	10:51:50	11.07828492	11.717	20.839	283.5184	0.437	1.775	20.28807	7.008285	142.20
569	5	54°31.77 N	10°02.36 E	03.11.2021	10:51:24	11.21465041	12.445	22.331	276.6308	0.479	2.832	19.66868	7.114655	145.50
569	10	54°31.77 N	10°02.36 E	03.11.2021	10:50:50	12.40265621	12.28	22.429	255.5752	0.477	2.801	41.10156	7.872656	161.00
569	15	54°31.77 N	10°02.36 E	03.11.2021	10:50:12	11.89618389	12.129	23.004	227.5969	0.234	2.336	68.35187	7.566184	154.88
569	20	54°31.77 N	10°02.36 E	03.11.2021	10:49:26	11.18659232	11.958	23.429	178.3232	0.206	2.169	116.8167	7.116592	145.96
569	25	54°31.77 N	10°02.36 E	03.11.2021	10:48:46	9.943644593	11.926	23.554	129.5385	0.215	2.026	164.4785	6.333645	130.22
570	1	54°31.77 N	10°02.36 E	02.02.2021	9:46:56	14.64438914	4.606	19.689	350.3661	0.771	6.898	11.04336	9.274389	187.49
570	5	54°31.77 N	10°02.36 E	02.02.2021	9:46:26	15.04506145	4.608	19.689	351.6379	0.777	6.923	9.782642	9.535061	193.80
570	10	54°31.77 N	10°02.36 E	02.02.2021	9:45:51	16.41904333	4.607	19.688	347.7159	0.771	6.976	13.62756	10.40904	211.50
570	15	54°31.77 N	10°02.36 E	02.02.2021	9:45:12	14.75015275	4.611	19.688	299.3511	0.805	6.984	60.86993	9.600153	190.59
570	20	54°31.77 N	10°02.36 E	02.02.2021	9:44:37	14.75015275	4.611	19.69	293.1422	0.78	6.979	66.93451	9.360153	190.59

570	25	54°31.77 N	10°02.36 E	02.02.2022	9:43:53	14.65158184	4.987	19.821	278.9433	0.33	3.198	77.23605	9.261582		187.14
570	1	54°31.77 N	10°02.36 E	02.03.2022	9:34:41	14.76839929	4.304	21.04	342.9735	0.582	7.322	17.73861	9.368399		190.50
570	5	54°31.77 N	10°02.36 E	02.03.2022	9:34:14	14.46863675	4.304	21.039	335.7201	0.585	7.309	24.83128	9.178637		186.63
570	10	54°31.77 N	10°02.36 E	02.03.2022	9:33:38	15.11454846	4.33	21.078	319.7703	0.6	7.439	40.10238	9.584548		195.00
570	15	54°31.77 N	10°02.36 E	02.03.2022	9:33:03	15.6984361	4.397	21.201	308.2631	0.624	7.771	50.47488	9.968436		203.28
570	20	54°31.77 N	10°02.36 E	02.03.2022	9:32:04	15.53306195	4.569	21.523	293.1422	0.707	8.175	63.00771	9.873062		201.47
570	25	54°31.77 N	10°02.36 E	02.03.2022	9:30:50	16.11093084	4.686	22.499	290.9384	0.861	7.317	61.89632	10.21093		206.82
571	1	54°31.77 N	10°02.36 E	12.04.2022	8:59:32	15.99658109	5.605	13.446	368.6146	0	0.401	-0.85247	9.966581		196.28
571	5	54°31.77 N	10°02.36 E	12.04.2022	8:59:07	15.94102216	5.603	13.445	370.6144	0	0.061	-2.78707	9.931022		195.60
571	10	54°31.77 N	10°02.36 E	12.04.2022	8:58:37	15.45193297	5.535	13.502	370.4762	0.044	0.091	-2.18185	9.661933		191.42
571	15	54°31.77 N	10°02.36 E	12.04.2022	8:58:08	15.43970469	5.28	15.547	348.0206	0.021	0.644	17.17783	9.689705		193.28
571	20	54°31.77 N	10°02.36 E	12.04.2022	8:57:39	15.50738704	4.8	20.166	281.4164	0.072	0.894	75.63243	9.827387		199.38
571	25	54°31.77 N	10°02.36 E	12.04.2022	8:57:10	16.20711703	4.815	20.467	266.8905	0.298	3.048	89.00079	10.27712		208.70
572	1	54°31.77 N	10°02.36 E	03.05.2022	9:29:44	14.21695731	10.16967	13.952	290.0324	0	0.107	38.00677	8.916957		177.48
572	5	54°31.77 N	10°02.36 E	03.05.2022	9:29:44	15.90989818	9.732333	14.1833	291.0852	0.032	0.188	39.72608	9.979898		198.90
572	10	54°31.77 N	10°02.36 E	03.05.2022	9:29:44	15.67202191	7.064333	15.6966	287.8386	0.702	1.147	60.46657	9.862022		197.52
572	15	54°31.77 N	10°02.36 E	03.05.2022	9:29:44	15.41963608	5.759	17.5665	247.8023	0.061	0.638	106.2711	9.739636		196.83
572	20	54°31.77 N	10°02.36 E	03.05.2022	9:29:44	16.1910651	5.039667	19.879	183.1852	0.657	2.852	170.2532	10.29107		209.66
572	25	54°31.77 N	10°02.36 E	03.05.2022	9:29:44	5.758008797	4.988667	20.257	168.6912	0.707	3.698	183.9837			74.24

		54°31.77	10°02.36	12.07.202			18.3226						8.27062	
573	1	N	E	2	7:42:33	13.1606255	7	14.43	325.01	0	0	-47.991	5	164.94
		54°31.77	10°02.36	12.07.202				14.7523					8.50859	
573	5	N	E	2	7:42:33	13.54859373	18.159	3	317.65	0	0	-40.4406	4	170.44
		54°31.77	10°02.36	12.07.202			15.6433	16.0403					9.70958	
573	10	N	E	2	7:42:33	15.4195868	3	3	298.77	0	0	-10.115	7	193.40
		54°31.77	10°02.36	12.07.202			11.2816					70.5634	12.7648	
573	15	N	E	2	7:42:33	20.15485982	7	18.08	240.369	0.054	0.254	5	6	256.96
		54°31.77	10°02.36	12.07.202								152.219	13.4386	
573	20	N	E	2	7:42:33	21.1486079	9.1175	19.5085	169.452	0.137	2.381	7	1	273.53
		54°31.77	10°02.36	12.07.202			8.57566					176.152	13.9224	
573	25	N	E	2	7:42:33	21.95244494	7	20.763	146.398	0.197	4.864	6	4	283.11
		54°31.77	10°02.36	30.08.202			19.9973	13.1866	263.822			5.07300	6.84487	
574	1	N	E	2	7:46:11	10.93487192	3	7	9	0	0	6	2	135.84
		54°31.77	10°02.36	30.08.202			19.9986	13.2906	260.805			7.85524	6.80515	
574	5	N	E	2	7:46:11	10.88515373	7	7	5	0	0	6	4	135.31
		54°31.77	10°02.36	30.08.202			19.9656		267.085			1.18118	6.74565	
574	10	N	E	2	7:46:11	10.76565546	7	13.746	9	0	0	1	5	134.51
		54°31.77	10°02.36	30.08.202			19.9723		254.928			12.6426	6.80502	
574	15	N	E	2	7:46:11	10.8450248	3	13.999	2	0	0	5	5	135.71
		54°31.77	10°02.36	30.08.202			14.6633	19.4423	115.477			168.922	7.01270	
574	20	N	E	2	7:46:11	11.06270755	3	3	8	0.061	0	3	8	142.84
		54°31.77	10°02.36	30.08.202			10.3773	21.7023				302.116		
574	25	N	E	2	7:46:11	6.52086013	3	3	2.61232	0.089	0.637	7	4.13086	83.59
		54°31.77	10°02.36	28.09.202				13.7426	281.802			11.7874		
575	1	N	E	2	7:42:33	15.10296979	15.415	7	6	0.059	0.095	2	9.41297	185.89
		54°31.77	10°02.36	28.09.202			15.4603	13.7903	269.782			23.1838	8.50302	
575	5	N	E	2	7:42:33	13.62302568	3	3	6	0.168	0.247	1	6	167.71
		54°31.77	10°02.36	28.09.202								278.844		
575	10	N	E	2	7:42:33	14.47005036	16.167	16.091		0.141	0.398	6	9.08005	181.41
		54°31.77	10°02.36	28.09.202					197.670			85.6390	8.89675	
575	15	N	E	2	7:42:33	14.10675761	15.46	18.465	5	0.131	0.456	7	8	179.01
		54°31.77	10°02.36	28.09.202			15.2853		50.0292			230.618		
575	20	N	E	2	7:42:33	12.93112999	3	18.668	2	0.614	1.092	2	8.16113	164.26
		54°31.77	10°02.36	28.09.202			11.8906	20.9516					4.32762	
575	25	N	E	2	7:42:33	6.817627614	7	7	0	0.21	0.366	296.103	8	87.89
		54°31.77	10°02.36	11.10.202			14.3633	17.5286	232.620			59.5236	6.98866	
576	1	N	E	2	7:42:33	11.1486674	3	7	1	0	0	6	7	138.91

576	5	54°31.77 N	10°02.36 E	11.10.2012	7:42:33	11.26285362	14.54233	17.7093	220.2514	0.038	0.232	70.22595	7.072854	141.07
576	10	54°31.77 N	10°02.36 E	11.10.2012	7:42:33	11.57118544	14.894	18.9713	77.73943	0.405	3.898	205.2765	7.281185	145.69
576	15	54°31.77 N	10°02.36 E	11.10.2012	7:42:33	11.49666677	14.59667	19.744	122.5714	0.346	3.516	161.8583	7.246667	145.72
576	20	54°31.77 N	10°02.36 E	11.10.2012	7:42:33	12.38242647	14.42	20.3483	159.3659	0.148	1.186	125.8831	7.822426	157.46
576	25	54°31.77 N	10°02.36 E	11.10.2012	7:42:33	11.72239803	14.19133	20.9696	110.7173	0.1	0.98	173.7062	7.412398	150.03
577	1	54°31.77 N	10°02.36 E	09.11.2012	7:42:33	13.66795723	12.645	22.083	226.9892	0.259	1.615	67.40199	8.557957	169.22
577	5	54°31.77 N	10°02.36 E	09.11.2012	7:42:33	13.78252809	12.66267	22.12667	217.9097	0.251	1.648	76.08984	8.622528	170.71
577	10	54°31.77 N	10°02.36 E	09.11.2012	7:42:33	13.97210467	12.73433	22.3583	212.3536	0.35	2.135	80.66467	8.742105	173.22
577	15	54°31.77 N	10°02.36 E	09.11.2012	7:42:33	12.27752585	12.80233	22.434	189.8983	0.32	2.562	102.0636	7.697526	152.76
577	20	54°31.77 N	10°02.36 E	09.11.2012	7:42:33	13.72396103	12.99533	22.862	150.4195	0.372	3.947	138.7195	8.623961	171.69
577	25	54°31.77 N	10°02.36 E	09.11.2012	7:42:33	13.5572534	13.02667	23.611	84.65801	0.275	2.965	201.4915	8.537253	170.66
578	1	54°31.77 N	10°02.36 E	08.12.2012	7:42:33	13.59981909	6.025667	14.9946	340.3591	0.432	2.931	19.44932	8.149819	148.63
578	5	54°31.77 N	10°02.36 E	08.12.2012	7:42:33	12.66561699	6.536667	15.812	334.4109	0.396	2.795	19.05073	7.605617	139.22
578	10	54°31.77 N	10°02.36 E	08.12.2012	7:42:33	13.36250158	6.815333	17.6883	327.3219	0.427	3.324	19.47349	8.052502	148.64
578	15	54°31.77 N	10°02.36 E	08.12.2012	7:42:33	12.40124451	6.945	19.2193	319.6481	0.449	3.526	22.55878	7.511245	139.53
578	20	54°31.77 N	10°02.36 E	08.12.2012	7:42:33	12.53072461	7.323333	20.5956	307.8789	0.68	5.288	28.11056	7.610725	142.00
578	25	54°31.77 N	10°02.36 E	08.12.2012	7:42:33	12.9340279	7.4315	20.738	207.0098	0.609	4.869	125.5715	7.854028	146.64
579	1	54°31.77 N	10°02.36 E	26.01.2013	7:42:33	15.36357012	4.777	21.349	332.7374	0.327	7.627	22.91458	9.543574	185.20
579	5	54°31.77 N	10°02.36 E	26.01.2013	7:42:33	16.20105462	4.801333	21.3716	335.2636	0.331	7.706	20.18398	10.07105	195.33

579	10	54°31.77 N	10°02.36 E	26.01.2023	7:42:33	16.34246	4.87766	21.4226	335.812	0.388	7.998	18.8765	10.1624	197.70
579	15	54°31.77 N	10°02.36 E	26.01.2023	7:42:33	14.65170891	5.39966	21.8133	323.675	0.328	7.681	25.4477	9.10170	176.49
579	20	54°31.77 N	10°02.36 E	26.01.2023	7:42:33	15.0905389	6.08266	23.0383	296.220	0.552	9.078	43.9874	9.40053	183.61
579	25	54°31.77 N	10°02.36 E	26.01.2023	7:42:33	15.71014872	6.33766	23.612	182.059	0.533	8.811	152.310	9.81014	191.65
580	1	54°31.77 N	10°02.36 E	26.02.2023	7:42:33	8.018899244	4.035	21.204	371.45	0.313	7.213	-8.11021	5.09494	103.61
580	5	54°31.77 N	10°02.36 E	26.02.2023	7:42:33	8.852023443	4.041	21.211	372.12	0.314	7.299	-8.83503	5.62429	114.37
580	10	54°31.77 N	10°02.36 E	26.02.2023	7:42:33	9.252846652	4.049	21.216	369.56	0.303	8.284	-6.41544	5.88245	119.63
580	15	54°31.77 N	10°02.36 E	26.02.2023	7:42:33	8.364390816	4.086	21.231	368.95	0.627	8.957	-6.18268	5.32318	108.63
580	20	54°31.77 N	10°02.36 E	26.02.2023	7:42:33	8.366846043	5.363	22.23	297.19	0.575	8.704	50.7012	5.33015	108.90
580	25	54°31.77 N	10°02.36 E	26.02.2023	7:42:33	10.20630466	5.981	23.13	227.84	0.87	9.026	111.443	6.51631	133.70
581	1	54°31.77 N	10°02.36 E	26.03.2023	7:42:33	8.920506394	4.304	20.348	345.6	0.035	0.408	16.8065	5.63873	113.29
581	5	54°31.77 N	10°02.36 E	26.03.2023	7:42:33	9.22588469	4.351	20.631	335.5	0.045	0.753	25.5955	5.83509	117.34
581	10	54°31.77 N	10°02.36 E	26.03.2023	7:42:33	8.704228687	4.376	20.627	336.8	0.033	0.377	24.1143	5.52105	111.84
581	15	54°31.77 N	10°02.36 E	26.03.2023	7:42:33	8.221261061	4.426	20.678	331.9	0.031	0.272	28.3449	5.22384	105.98
581	20	54°31.77 N	10°02.36 E	26.03.2023	7:42:33	8.639998606	4.472	20.82	296.1	0.072	0.802	62.6035	5.51114	111.80
581	25	54°31.77 N	10°02.36 E	26.03.2023	7:42:33	9.009322548	4.521	20.932	300.1	0.056	0.665	58.0032	5.76499	118.45
582	1	54°31.77 N	10°02.36 E	26.04.2023	7:42:33	14.6757433	7.908	12.068		0.015	0.063		9.1013	177.14
582	5	54°31.77 N	10°02.36 E	26.04.2023	7:42:33	14.41640471	7.794	14.928		0.042	1.111		8.98087	176.04
582	10	54°31.77 N	10°02.36 E	26.04.2023	7:42:33	12.94031527	6.924	17.112		1.871	2.372		8.14082	160.79

		54°31.77	10°02.36	26.04.202									10.1904	
582	15	N	E	3	7:42:33	16.08181446	6.981	17.738		0.028	0.023		1	206.07
		54°31.77	10°02.36	26.04.202									8.41892	
582	20	N	E	3	7:42:33	13.26630893	6.641	18.8		0.049	0.069		8	170.92
		54°31.77	10°02.36	26.04.202									5.50941	
582	25	N	E	3	7:42:33	8.692728331	5.228	20.747		1.739	2.171		7	111.40
		54°31.77	10°02.36	26.05.202									4.98444	
583	1	N	E	3	7:42:33	7.819259176	12.589	13.792	330.94	0.034	0.29	-18.5375	3	102.45
		54°31.77	10°02.36	26.05.202										
583	5	N	E	3	7:42:33	8.27153691	12.56	13.786	331.64	0.029	0.024	-19.0175	5.27781	108.70
		54°31.77	10°02.36	26.05.202										
583	10	N	E	3	7:42:33	9.44668302	9.933	14.13	347.91	0.031	0.203	-17.1964	6.03143	124.36
		54°31.77	10°02.36	26.05.202								19.4112	5.75368	
583	15	N	E	3	7:42:33	8.992063005	8.696	14.795	318.58	0.036	0.197	8	7	119.13
		54°31.77	10°02.36	26.05.202								168.723	4.95411	
583	20	N	E	3	7:42:33	7.692972114	6.848	18.337	172.9	0.31	1.173	8	9	103.77
		54°31.77	10°02.36	26.05.202								243.129	4.66815	
583	25	N	E	3	7:42:33	7.228997423	6.259	19.344	99.4	0.377	1.182	2	6	98.30
		54°31.77	10°02.36	26.06.202					308.170				4.77157	
584	1	N	E	3	7:42:33	7.510742064	16.06	13.803	5	0.678	0.815	-17.8919	4	97.22
		54°31.77	10°02.36	26.06.202					309.812				5.63825	
584	5	N	E	3	7:42:33	8.870810891	15.514	13.794	5	0.845	0.902	-16.2716	6	115.17
		54°31.77	10°02.36	26.06.202					288.624			15.8887	6.10133	
584	10	N	E	3	7:42:33	9.587753803	13.615	13.929	4	1.458	2.21	6	3	124.94
		54°31.77	10°02.36	26.06.202					206.306			116.716		
584	15	N	E	3	7:42:33	11.6908971	9.769	16.924	6	0.264	1.041	9	7.488	155.14
		54°31.77	10°02.36	26.06.202					177.206			149.734	7.50627	
584	20	N	E	3	7:42:33	11.68160836	8.749	18.35	1	1.877	2.664	2	2	156.14
		54°31.77	10°02.36	26.06.202					137.317			197.043		
584	25	N	E	3	7:42:33	9.685764087	7.464	19.057	9	0.869	1.7	3	6.2337	130.32
				03.06.202								10.3032	9.00812	
EB-G-1	0	54.4791	9.905416	2		14.79	13.46	14.04	295.12	0.02	1.18	8	6	179.91
				03.06.202								14.0972	9.41739	
EB-G-1	5	54.4791	9.905416	2		15.08	12.27	15.28	296.76	0.01	0.81	8	6	186.05
				03.06.202								16.0427	10.1662	
EB-G-1	10	54.4791	9.905416	2		16.28	12.11	15.35	295.75	0.10	2.08	3	6	200.90

EB-G-1	15	54.4791	9.905416	03.06.2022	18.41	7.27	18.01	289.44	0.30	4.20	52.06622	11.5765	231.00
EB-G-1	20	54.4791	9.905416	03.06.2022	19.51	5.66	19.23	247.90	0.53	6.82	103.1438	12.29218	246.45
EB-G-1	22	54.4791	9.905416	03.06.2022	17.00	5.86	19.07	204.59	0.46	4.51	144.1847	10.72198	214.57
EB-G-2	0	54.48911	9.939163	03.06.2022	14.80	13.70	15.15	279.79	0.02	1.48	21.71932	9.240661	182.57
EB-G-2	5	54.48911	9.939163	03.06.2022	15.33	13.14	15.00	299.73	0.02	1.21	6.046337	9.583032	189.52
EB-G-2	10	54.48911	9.939163	03.06.2022	13.97	12.25	15.23	296.71	0.09	1.91	14.38288	8.742716	172.89
EB-G-2	15	54.48911	9.939163	03.06.2022	18.03	7.99	17.60	292.09	0.30	5.43	44.74139	11.3433	226.47
EB-G-2	20	54.48911	9.939163	03.06.2022	19.57	5.66	19.28	251.33	0.56	8.89	99.6467	12.35208	248.00
EB-G-2	22	54.48911	9.939163	03.06.2022	15.59	5.59	19.37	182.49	0.49	7.88	167.3439	9.835329	198.21
MB-G-1	0	54.26493	11.43442	31.05.2022	15.05	13.86	12.84	247.53	0.04	1.76	56.49226	9.23905	176.62
MB-G-1	5	54.26493	11.43442	31.05.2022	15.53	13.36	12.79	289.56	0.00	1.12	18.7324	9.533989	182.28
MB-G-1	10	54.26493	11.43442	31.05.2022	14.07	13.24	13.01	289.56	0.01	1.91	19.03472	8.647467	165.79
MB-G-1	15	54.26493	11.43442	31.05.2022	15.04	13.18	13.15	288.31	0.04	3.01	20.40337	9.246299	177.33
MB-G-1	21	54.26493	11.43442	31.05.2022	18.90	7.49	21.43	211.32	0.18	5.95	119.3531	11.8196	232.63
MB-G-2	0	54.26359	11.42652	31.05.2022	14.24	13.60	12.86	295.43	0.01	1.76	11.26998	8.705227	165.56
MB-G-2	5	54.26359	11.42652	31.05.2022	14.70	13.96	12.75	208.63	0.01	1.82	94.02379	9.010557	171.40
MB-G-2	10	54.26359	11.42652	31.05.2022	13.42	13.79	12.79	287.68	0.03	1.80	17.78227	8.2156	156.94
MB-G-2	15	54.26359	11.42652	31.05.2022	15.17	13.19	13.15	288.28	0.06	3.42	20.40756	8.986178	178.30

MB-G-2	21	54.26359	11.42652	31.05.2022		15.90	7.46	21.41	212.01	0.11	5.61	118.9466	9.923733	195.11
MB-NG-1	0	54.52435	10.66747	31.05.2022		13.42	14.18	14.05	288.45	0.00	1.35	12.27107	8.337307	162.99
MB-NG-1	5	54.52435	10.66747	31.05.2022		13.53	13.99	14.31	284.67	0.00	1.03	16.66044	8.413862	164.62
MB-NG-1	10	54.52435	10.66747	31.05.2022		14.27	13.32	14.48	283.31	0.00	1.25	21.94859	8.885197	174.22
MB-NG-1	15	54.52435	10.66747	31.05.2022		15.65	13.04	14.80	281.79	0.01	2.69	24.63527	9.763858	192.04
MB-NG-1	19	54.52435	10.66747	31.05.2022		14.78	11.12	21.23	257.66	0.09	3.21	48.65352	9.335225	187.96
MET-1-BH	0	54.57493	19.13579	26.05.2022	18:00	12.24	11.07	7.12	348.93	0.02	0.43	-12.062	7.410395	138.18
MET-1-BH	10	54.57493	19.13579	26.05.2022	18:00	12.67	9.21	7.43	351.10	0.03	0.44	-0.39351	7.679207	143.70
MET-1-BH	20	54.57493	19.13579	26.05.2022	18:00	13.29	9.09	7.47	350.65	0.03	0.38	0.87303	8.066625	151.21
MET-1-BH	30	54.57493	19.13579	26.05.2022	18:00	12.79	4.78	7.53	365.70	0.02	0.14	24.32567	7.717914	144.20
MET-1-BH	40	54.57493	19.13579	26.05.2022	18:00	15.49	4.25	7.56	350.11	0.01	0.19	44.63697	9.380423	175.26
MET-1-BH	50	54.57493	19.13579	26.05.2022	18:00	15.26	4.06	7.60	354.78	0.05	0.29	41.85763	9.255345	173.73
MET-1-BH	60	54.57493	19.13579	26.05.2022	18:00	11.50	4.16	7.73	325.36	0.05	0.74	69.34655	6.987904	131.44
MET-1-BH	70	54.57493	19.13579	26.05.2022	18:00	18.19	6.61	10.58	82.09	0.14	3.71	277.0988	10.83331	196.10
MET-1-BH	78	54.57493	19.13579	26.05.2022	18:00	54.82	6.85	11.19	27.20	0.62	2.83	327.2628	32.71509	594.48
MET-1-BH	87	54.57493	19.13579	26.05.2022	18:00	27.85	6.90	11.28	15.17	0.64	3.71	338.4257	16.62563	302.24
MET1-REF	0	54.57352	19.15138	26.05.2022	20:20	10.07	11.13	6.40	323.88	0.04	0.40	13.52912	5.953784	106.39
MET1-REF	10	54.57352	19.15138	26.05.2022	20:20	10.60	9.32	7.43	350.22	0.04	0.14	-0.48113	6.276578	113.09

MET1-REF	20	54.57352	19.15138	26.05.2022	20:20	9.90	9.07	7.44	349.01	0.04	0.16	2.729529	5.864867	105.37
MET1-REF	30	54.57352	19.15138	26.05.2022	20:20	13.41	4.65	7.50	364.87	0.03	0.22	26.46825	7.850705	138.13
MET1-REF	40	54.57352	19.15138	26.05.2022	20:20	13.77	4.32	7.57	365.80	0.03	0.24	28.60726	8.066949	141.85
MET1-REF	50	54.57352	19.15138	26.05.2022	20:20	13.40	4.09	7.60	353.36	0.01	0.24	42.96349	7.853282	138.58
MET1-REF	60	54.57352	19.15138	26.05.2022	20:20	14.22	4.13	7.69	323.49	0.04	0.51	71.56318	8.328147	147.07
MET1-REF	70	54.57352	19.15138	26.05.2022	20:20	19.81	6.34	10.40	36.56	0.58	2.92	324.3926	11.68192	207.73
MET1-REF	77	54.57352	19.15138	26.05.2022	20:20	17.31	6.81	11.17	7.17	0.59	2.33	347.2667	10.22458	182.42
MET1-MP	0	54.57147	19.165	26.05.2022	22:00	9.11	10.68	7.14	325.12	0.02	0.23	14.13271	5.414315	97.69
MET1-MP	10	54.57147	19.165	26.05.2022	22:00	9.35	10.66	7.22	251.90	0.02	0.42	85.60982	5.550314	100.33
MET1-MP	20	54.57147	19.165	26.05.2022	22:00	9.35	9.02	7.43	348.68	0.01	0.36	3.442326	5.560361	100.76
MET1-MP	30	54.57147	19.165	26.05.2022	22:00	11.70	4.89	7.51	361.33	0.01	0.53	27.51862	7.036329	129.80
MET1-MP	40	54.57147	19.165	26.05.2022	22:00	13.91	4.50	7.58	365.63	0.02	0.49	26.94906	8.368292	154.40
MET1-MP	50	54.57147	19.165	26.05.2022	22:00	14.14	4.34	7.60	358.84	0.01	0.47	35.17256	8.514638	157.54
MET1-MP	60	54.57147	19.165	26.05.2022	22:00	13.79	4.21	7.66	350.39	0.03	0.68	44.48583	8.312204	154.15
MET1-MP	70	54.57147	19.165	26.05.2022	22:00	17.42	6.23	10.33	93.04	0.41	2.16	270.3241	10.56012	197.36
MET1-MP	77	54.57147	19.165	26.05.2022	22:00	20.32	6.76	11.06	21.77	0.74	1.76	333.6665	12.33438	231.21
AB-G-1	0	54.73107	13.4924	30.05.2022	02:50	9.29	12.04	8.70	318.18	0.02	1.45	7.623406	5.560269	101.43
AB-G-1	10	54.73107	13.4924	30.05.2022	02:50	8.59	11.91	8.90	303.08	0.01	0.76	22.89092	5.142024	94.21

AB-G-1	20	54.73107	13.4924	30.05.2022	02:50	9.23	12.78	10.02	290.54	0.01	1.89	26.8926	5.540356	101.80
AB-G-1	30	54.73107	13.4924	30.05.2022	02:50	9.45	12.84	10.07	285.41	0.01	1.99	31.38224	5.67596	104.21
AB-G-1	34	54.73107	13.4924	30.05.2022	02:50	9.29	12.84	10.07	285.24	0.02	1.35	31.56119	5.580237	102.49
AB-G-2	0	54.73192	13.50	30.05.2022	04:00	8.86	11.96	8.82	307.27	0.02	1.30	18.59786	5.308161	97.40
AB-G-2	10	54.73192	13.50	30.05.2022	04:00	9.93	11.92	8.94	303.35	0.02	0.43	22.49625	5.95625	108.86
AB-G-2	20	54.73192	13.50	30.05.2022	04:00	9.11	12.69	9.94	290.78	0.02	1.21	27.43468	5.46894	100.74
AB-G-2	30	54.73192	13.50	30.05.2022	04:00	11.06	12.84	10.07	285.05	0.02	1.08	31.76017	6.615342	120.79
AB-G-2	34	54.73192	13.50	30.05.2022	04:00	12.01	12.83	10.07	285.35	0.02	1.28	31.5086	7.192496	131.67
AB-NG	0	54.65603	12.63819	30.05.2022		10.63	13.45	10.40	304.77	0.01	0.61	7.792726	6.374781	116.76
AB-NG	5	54.65603	12.63819	30.05.2022		11.26	13.10	10.37	240.77	0.01	0.76	72.70306	6.758429	124.40
AB-NG	10	54.65603	12.63819	30.05.2022		10.64	12.95	10.00	240.02	0.01	0.86	75.16199	6.393667	117.38
AB-NG	15	54.65603	12.63819	30.05.2022		10.91	13.04	12.15	285.09	0.01	0.72	26.38306	6.582064	122.09
AB-NG	18	54.65603	12.63819	30.05.2022		11.48	13.02	12.16	278.73	0.01	0.84	32.73402	6.925522	128.40