



*Seismological
Bulletin
Earthquakes in
and around
Israel*

2019



**Ministry of Energy
Geological Survey of Israel**

Seismological Bulletin

Earthquakes in the vicinity of Israel during 2019

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PREFACE

The Seismology Division at the Geophysical institute of Israel (GII), monitors the seismic activity in the vicinity of Israel as part of the national earthquake preparedness plan. Within this framework, GII also updates the National Data Center (NDC) of Israel.

In 2019, the Seismology Division analyzed 4,993 events of seismic and non-seismic sources. It includes local, regional and teleseismic events, and non-seismic events, which are mainly verified as man-made quarry blasts. This bulletin contains source parameters of 1141 local and regional earthquakes, including 698 events with magnitude $M_w \geq 2.0$. Six events were reported as felt ones.

All our data are updated and listed in our web site: <https://earthquake.co.il>

ACQUISITION SYSTEMS

The seismic data are acquired by two main sources: the old stations, and the new TRUAA stations, all comprising together the upgraded Israel Seismic Network (ISN). Cyprus, Greece and Turkey stations also been used for locating regional events. The old stations consist of a variety of seismic instrumentation, including broadband seismometers, short period seismometers, and triggered accelerometers. Telemetry is done through satellite, cellular, and internet communication. The old ISN stations list is provided in Table 1 and shown in Figure 1.

Satellite-based communication stations

Most of the old satellite-based ISN stations are equipped with three component Trillium Compact 120 or 240 seismometers. The only exception is MBRI (Mt. Berech station), which is equipped with a short period L-4C (Mark Product) seismometer. Equipment in the field stations includes a 60-cm-satellite dish, Cygnus data-logger and Trident analog to digital (A2D) conversion system. All seismometers have 1 Hz natural frequency. The satellite-based communication stations continuously broadcast via satellite Amos-3. The type of transmitting data is shown in Figure 2 and Table 2.

CNF and IMS stations

The Seismology Division operates six Cooperating National Facilities (CNF) and two International Monitoring System (IMS) stations in Eilat and Meron sites, which are part of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) network (Table 3, Figures 3-4), transmitted via internet lines. All these stations belong to the Israel Seismic Network.

Data acquisition

The data acquisition system is a product of Nanometrics Inc., Canada. It is a closed system of satellite communication, used with VSAT and HUB. This satellite-based communication system was developed for seismological purposes only.

Two hub units (Carina) are installed at the central data acquisition system, merging the data. Data are acquired by Time Division Multiple Access (TDMA) of 3.0 seconds and each Carina uses space segments of 100K. The Data Acquisition Server utilizes the NAQSServer and DataServer software, developed by Nanometrics Inc., Canada. The parallel detection software was developed, in-house, by Shapira and Avirav (1990a,b). The program receives streaming data and provides detection, using STA/LTA algorithm of Johnson (1979), for local, regional and teleseismic events.

Table 1. List of seismic stations that comprised the old Israel Seismic Network in 2019

No.	Station Name	Station Code	Lat. ⁰ N	Long. ⁰ E	Altitude km	Communication system	Seismometer	Comments
1	Amatzia	AMAZ	31.533	34.915	0.396	cellular	STS-2	BB/CNF
2	Beit Lehem Haglilit	BLGI	32.733	35.191	0.19	satellite	Trillium compact	
3	Giv'at Haem	GEM	33.210	35.663	0.223	internet	STS-2	BB/CNF
4	Dragot	DSI	31.593	35.392	0.012	satellite	Trillium compact	
5	Eilat	EIL	29.671	34.951	0.210	internet	STS-2	BB
6	Hanita	HNTI	33.082	35.174	0.301	satellite	Trillium compact	
7	Hemdat	HMDT	32.252	35.526	0.151	satellite	Trillium compact	
8	Karmit	KRMI	30.104	34.725	0.473	satellite	Trillium compact	
9	Ktziot	KZIT	30.906	34.398	0.247	internet	STS-2	BB/CNF
10	Malkishua	MMLI	32.438	35.422	0.511	internet	STS-2	BB/CNF
11	Masada	MDBI	31.312	35.358	-1.516	cellular	OYO Geospace	
		MSBI	31.312	35.358	-0.262	cellular	Trillium 240	
12	Mt. Berech	MBRI	29.795	34.915	0.842	satellite	L4C/S13	
13	Mt. Harif	HRFI	30.036	35.037	0.438	internet	STS-2	BB/CNF
14	Neve Ativ	NATI	33.262	35.736	0.975	satellite	Trillium compact	
15	Ofer	OFRI	32.621	34.985	0.161	satellite	Trillium compact	
16	Paran	PRNI	30.351	35.005	0.411	satellite	Trillium compact	
17	Salit	SLTI	32.240	35.040	0.25	satellite	Trillium compact	
18	Yatir	YTIR	31.363	35.116	0.905	satellite	Trillium compact	
19	Zofar	ZFRI	30.554	35.178	-0.037	satellite	Trillium compact	

Table 2. Station parameters

Parameters	SP satellite-cellular based communication stations		CNF	IMS
	S13 / L4C/ 1Hz Trillium Compact 120S	Oyo geospace 2Hz		
Seismometer	S13 / L4C/ 1Hz Trillium Compact 120S	Oyo geospace 2Hz	STS2	Meron Array – Guralp CMG-3 EIL - STS2
Resolution	24 bits	24 bits	24 bits	24 bits
Sampling rate	40	500	40	40
Gain	1	128	40	1
Volt peak to peak	40	20	40	40

Table 3. Stations of the Meron and Eilat arrays part of the CRF

No.	Station Code	Latitude °N	Longitude °E	Altitude Km	Seismometer
1	MMA0B	33.01527	35.40305	0.809	Guralp CMG-3
2	MMA0	33.01518	35.40311	0.810	
3	MMA1	33.01812	35.4062	0.776	
4	MMA2	33.01249	35.40572	0.776	
5	MMA3	33.01205	35.40056	0.792	
6	MMA4	33.01462	35.39752	0.851	
7	MMB1	33.01513	35.41081	0.733	
8	MMB2	33.00971	35.39526	0.878	
9	MMB3	33.01954	35.39714	0.812	
10	MMB4	33.02084	35.40199	0.806	
11	MMC1	33.03052	35.40368	0.827	
12	MMC2	33.02681	35.41164	0.701	
13	MMC3	33.01826	35.41381	0.713	
14	MMC4	33.00722	35.41861	0.75?	
15	MMC5	33.00869	35.41269	0.766	
16	MMC6	33.01203	35.39151	0.893	
17	MMC7	33.02205	35.39256	0.816	
18	EIL	29.6712	34.951	0.210	STS2

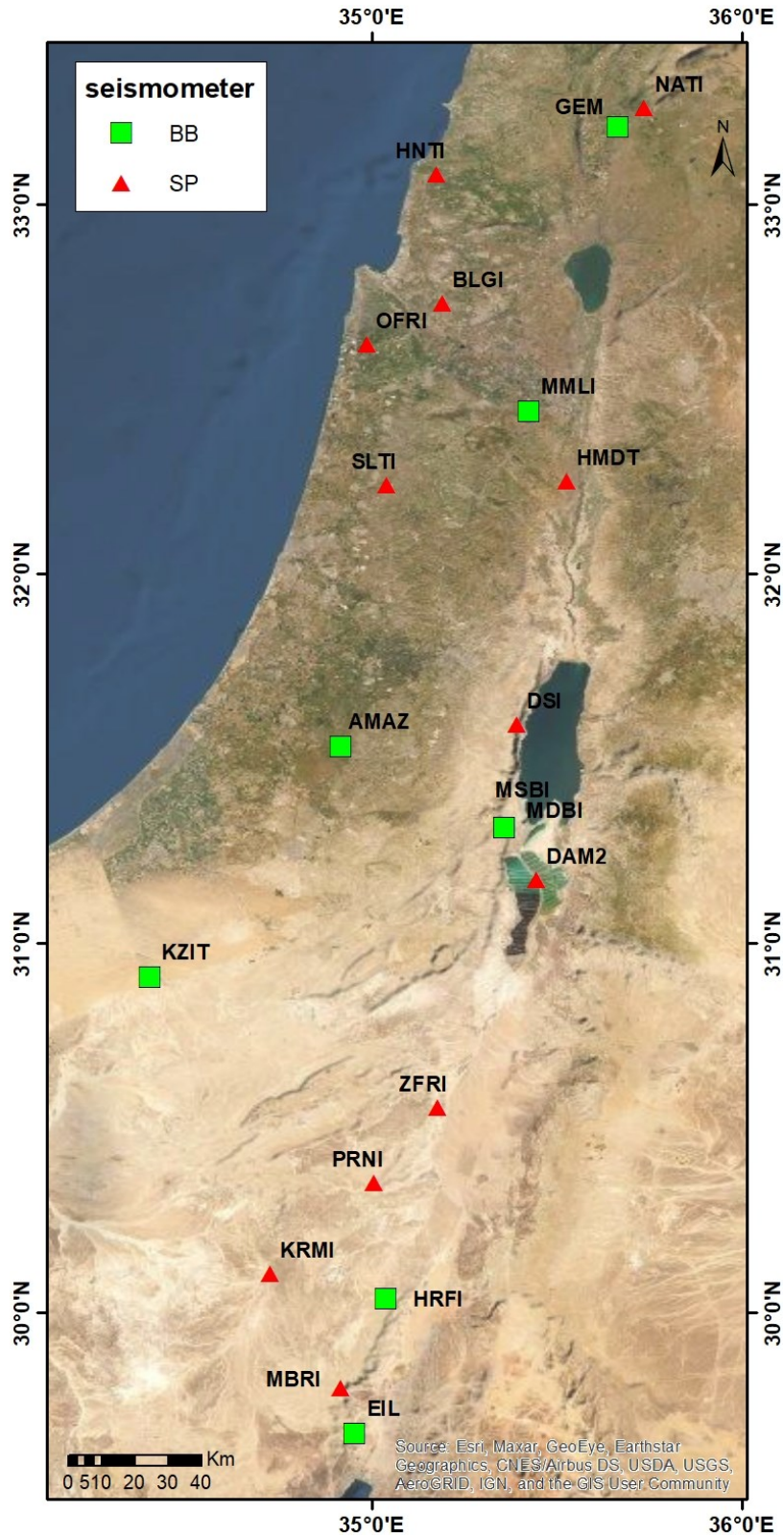


Figure 1. Old Israel Seismic Network (ISN)

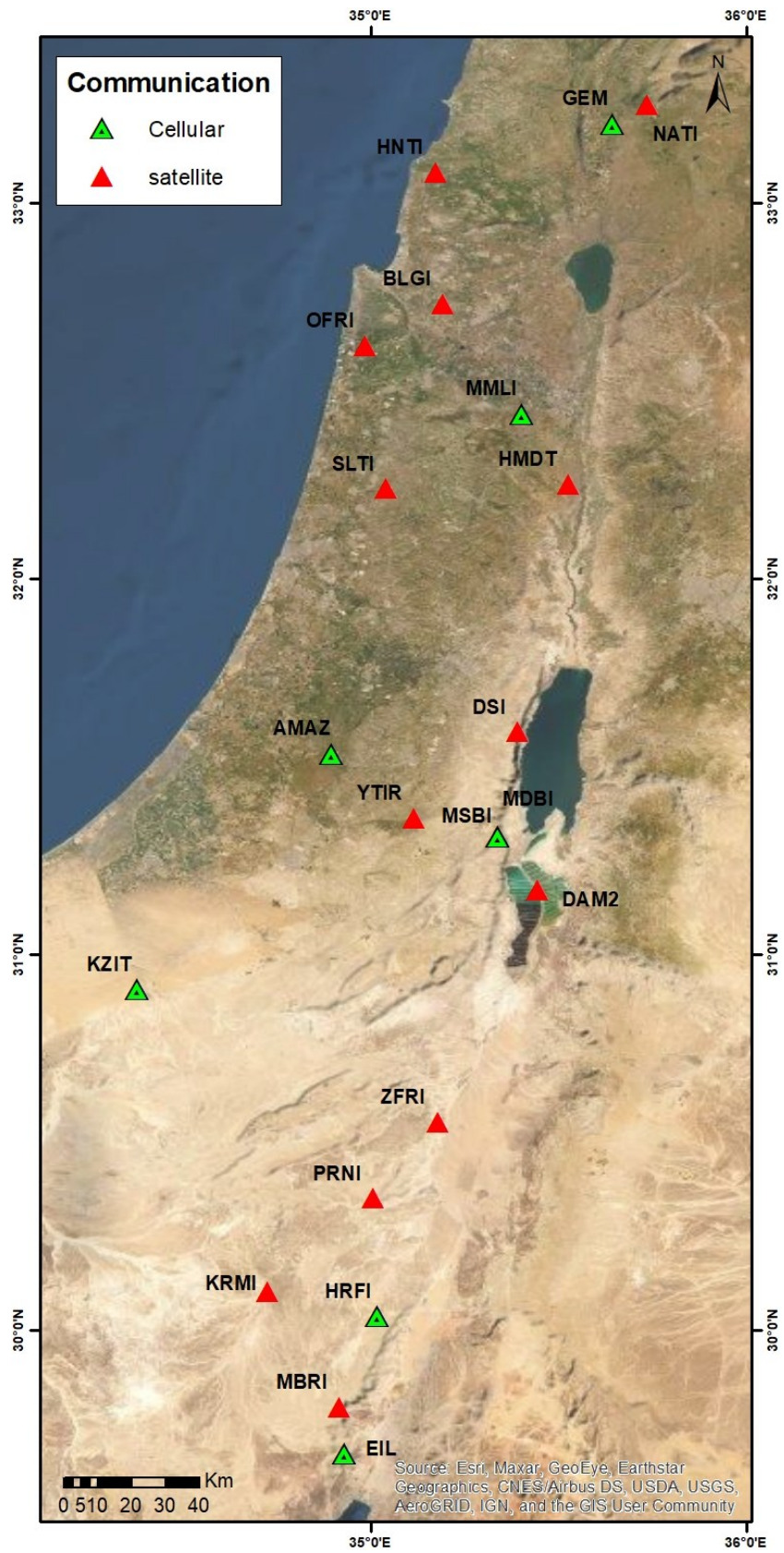


Figure 2. Map of the old ISN seismic stations with cellular and satellite data transfer



Figure 3. Meron IMS Array

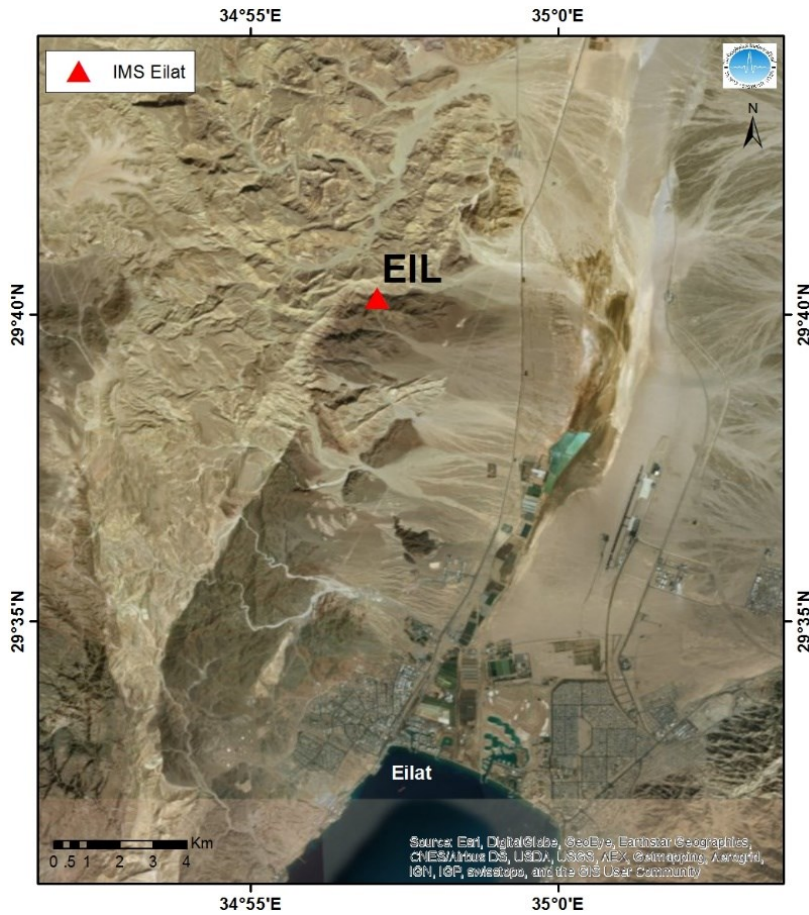


Figure 4. Eilat IMS station

TRUAA Earthquake Early Warning seismic network

Beginning November 2017, a gradual upgrade of the ISN stations and network has begun, as part of the steps required for the deployment of the TRUAA Earthquake Early Warning System (see Kurzon et al. 2020 for more details). By the end of 2019, there were 101 TRUAA stations, all over Israel.

The TRUAA seismic network is planned to acquire three types of motions:

1. Accelerations - acquired at all 121 planned stations, by Titan Strong Motion (SM) accelerometers of Nanometrics. This Accelerometer is deployed in the network using several different mounts or versions:

- A standard mount, located either on seismic piers or attached to concrete floors (such as in shelters), consists the majority of the stations.
- A vertical mount, located at some of the shelters (when possibly drainage is not very efficient in a specific site), in which the Titan is attached to the wall, and the 3 axes are rotated accordingly to walls orientation.
- A posthole Titan posthole, for cased borehole, as found in some of the field stations.

All Titans are set to $\pm 2g$ acceleration levels, and response is defined by 6 poles and 1 zero, with a flat response within the DC - 430Hz range. Sampling rate is set to 200Hz.

All Titans show maximum noise levels of -10dB to +5dB in reference to the AHNM (Clinton and Cauzzi, 2013), for the 95% percentile.

2. Velocities - acquired at 25 planned stations, by Trillium 120 Broadband (BB) seismometers of Nanometrics. This seismometer is deployed in the network using two different versions:

- Trillium 120 QA for surface or pier installations
- Trillium 120 PH for posthole installations

All Trillium 120 seismometers have output sensitivity of 1202.5 Volts per m/s, and response is defined by 11 poles and 6 zeros, with flat response between the 120s - 150Hz range. Sampling rate is set to 200Hz.

All sites in which Trillium 120 seismometers were co-located with the Titan accelerometers, were chosen due to their low seismic noise characteristics, and therefore show noise level (in most places, and within the 30s – 50Hz frequency range) of no more than -20dB the NHNM (Peterson, 1993), for the 95% percentile.

3. Displacements - acquired at 9 planned stations, by GNSS systems (GPS, GLONASS and Galileo satellites), including: PolaRx5 GPS receiver, B3/E6 Choke Ring antenna, and with UNAVCO Short Braced Monuments at most sites. Sampling rate is currently set to 1Hz.

Data is digitized and packed using 24-bit Centaur Dataloggers of Nanometrics, either the 3-Channel version, for SM stations, or the 6-channel version for SM+BB stations. 40V peak-to-peak gain is applied and a sensitivity of 400,000 Counts / Volt. GPS timing is provided by Trimble Bullet III antenna, with an accuracy of 5 μ s. A 32GB SD card is used to store the data locally, providing more than 6 months per 3-Channels stations, and more than 3 months per 6-Channels stations.

By the end of 2019, 99 stations were deployed 85 with only SM sensors, 14 with collocated BB+SM sensors, and 5 with collocated GNSS systems. The list of stations deployed by the end of 2019 are listed in Table 4, “A” indicating strong motion accelerometers, and “V” indicating broadband seismometers; their locations are shown in Fig. 5.

Table 4. TRUAA seismic network stations.

Sensor type A or V denotes strong motion accelerometer and seismometer correspondingly.

Station Code	Station Name	Sensor Type	Instrument	Lat	Long	Elevation, km
AFK	Afek	A	Titan	32.8228	35.1304	0.039
ALMG	Almog	A	Titan	31.7896	35.4611	-0.265
ALMT	Alumot	A	Titan	32.7081	35.547	0.041
ALN	Alonim	A	Titan	32.72111	35.14238	0.14
AMID	Ami'ad	A	Titan	32.92703	35.53934	0.274
ARD	Arad	A	Titan	31.25672	35.21033	0.6
ARIL	Ariel	A	Titan	32.104	35.2096	0.6
BLGI	Bet-Lehem Haglilit	A	Titan	32.7338	35.1918	0.193
BROR	Beer Ora	A	Titan	29.7109	34.9861	0.108
BSHV	Beer Sheva	A	Titan	31.2633	34.804	0.35
BTNR	Beit Nir	A	Titan	31.649	34.8719	0.269
BTOR	Beit Oren	A	Titan	32.7299	35.0057	0.367
BTSH	Beit She'an	A	Titan	32.4978	35.498	0
CVYN	Cohav Hayarden	A	Titan	32.5954	35.519	0.289
DSHN	Dishon	A	Titan	33.083	35.51935	0.429
EIL	Eilat Tunnel	A	Titan	29.67231	34.95198	0.245
		V	Trillium 120	29.67231	34.95198	0.245
ELAT	Eilat	A	Titan	29.5519	34.9528	0.034
ELFZ	Elifaz	A	Titan	29.797	35.0128	0.198
ELOT	Eylot	A	Titan	29.5823	34.9637	0.075
ENGV	Ein-Gev	A	Titan	32.7813	35.6387	-0.1995
EYHV	EnYahav	A	Titan	30.659	35.2357	-0.082
GDOT	Gadot	A	Titan	33.01628	35.6194	0.124
GEM	Giv'at HaEm	A	Titan	33.2106	35.66312	0.223
		V	Trillium 120	33.2106	35.66312	0.223
GLHS	Mevo Hama	A	Titan	32.71355	35.64969	0.32
		V	Trillium 120	32.71355	35.64969	0.32
GNNR	Gan-Ner	A	Titan	32.5279	35.3354	0.1863
GOSH	HaGoshrim	A	Titan	33.2196	35.6241	0.1005
GRFT	Grofit	A	Titan	29.94141	35.06386	0.159
HDNS	Had-Ness	A	Titan	32.9279	35.6413	-0.0276
HMRA	Hamra	A	Titan	32.19985	35.43572	-0.039
HNTI	Hanita	A	Titan	33.0827	35.1742	0.301
HRFI	Harif	A	Titan	30.0364	35.037	0.4392
		V	Trillium 120	30.0364	35.037	0.4392
HTCH	Technion Haifa	A	Titan	32.7789	35.024	0.177

HTRR	Hatrum Junction	A	Titan	31.1872	35.2413	0.2155
HULT	Hulata	A	Titan	33.05038	35.611	0.0816
HYGV	Hayogev	A	Titan	32.6108	35.2011	0.096
HZVA	Hazeva	A	Titan	30.7677	35.2801	-0.149
IDAN	Idan	A	Titan	30.83329	35.27274	-0.172
		V	Titan	30.83329	35.27274	-0.172
IUI	Joint University Institute Eilat	A	Titan	29.50125	34.91581	0.028
IZRL	Izrael	A	Titan	32.5628	35.3226	0.0855
JER	Jerusalem	A	Titan	31.7724	35.1981	0.777
JER	Jerusalem	V	Trillium 120	31.7724	35.1981	0.777
KARV	Kedem Arava	A	Titan	31.8086	35.4772	-0.309
KDZV	Kedmat Zvi	A	Titan	33.0295	35.6948	0.453
KEGD	Kibutz Ein-Gedi	A	Titan	31.4173	35.3794	-0.391
KMKB	Kfar HaMacabi	A	Titan	32.7923	35.11441	0.0305
KNHM	Kfar Nahum	A	Titan	32.8837	35.5791	-0.198
KRPN	Kfar Rupin	A	Titan	32.45843	35.55484	-0.2445
KRSH	Kiryat Shemona	A	Titan	33.2068	35.5686	0.1348
KSH0	Keshet	A	Titan	32.9816	35.811	0.7204
KZIT	Kziot	A	Titan	30.9068	34.3978	0.2398
KZIT	Kziot	V	Trillium 120	30.9068	34.3978	0.2398
LOD	Lod	A	Titan	31.9601	34.9021	0.051
LTN	Lotan	A	Titan	29.988	35.0858	0.198
LVBS	Lehavot Habashan	A	Titan	33.1409	35.6496	0.0978
MBRI	Berech Mountain	V	Trillium 120	29.79329	34.9152	0.85
MEFR	Maale Efrayim	A	Titan	32.0709	35.4034	0.2043
MEHL	Mehola	A	Titan	32.365	35.5155	-0.1817
MGDL	Migdal	A	Titan	32.84021	35.50721	-0.133
MLDT	Moledet	A	Titan	32.5885	35.438	0.067
MMLI	Malkishua	A	Titan	32.438	35.422	0.541
		V	Trillium 120	32.438	35.422	0.541
MNHM	Menahamia	A	Titan	32.6636	35.5523	-0.168
MPRN	Moshv Paran	A	Titan	30.3627	35.1543	0.119
MRHV	Merhavia	A	Titan	32.60542	35.30897	0.097
MRON	Meron	A	Titan	33.0152	35.403	0.795
		V	Trillium 120	33.0152	35.403	0.795
MSAM	Misgav	A	Titan	33.247	35.5486	0.8074
MSBI	Mezada	A	Titan	31.31255	35.35799	0.01
		V	Trillium 120	31.31255	35.35799	0.01
MSLM	Mizpe Shalem	A	Titan	31.5693	35.4001	-0.283
MSPR	Moshav SAPIR	A	Titan	30.6144	35.1861	-0.016

MTLA	Metula	A	Titan	33.27808	35.57827	0.519
NAMA	Naama	A	Titan	31.9066	35.4668	-0.1872
NATI	Neve-Ative	A	Titan	33.262	35.7364	1
NTKR	Neot Hakikar	A	Titan	30.9344	35.376	-0.344
NVZR	Neve Zohar	A	Titan	31.1536	35.3652	-0.377
OFRI	Moshav Ofer	A	Titan	32.62162	34.98621	0.161
		V	Trillium 120	32.62162	34.98621	0.161
ORTZ	Oretz Creek	A	Titan	30.97633	35.26051	0.001
PRNI	River Paran	A	Titan	30.3522	35.0052	0.411
PZL	Pazael	A	Titan	32.3196	35.5428	-0.202
RGMN	Argaman	A	Titan	32.1686	35.5216	-0.191
RMNI	Mizpe Ramon	A	Titan	30.59697	34.76259	0.874
		V	Trillium 120	30.59697	34.76259	0.874
RMOT	Ramot	A	Titan	32.8509	35.6657	-0.0151
ROI	Ro'i	A	Titan	32.2482	35.48784	0.072
RSFT	Ramat Hashofet	A	Titan	32.60808	35.09273	0.272
RSPN	Rosh Pina	A	Titan	32.9704	35.5465	0.352
SAMR	Samar	A	Titan	29.8331	35.0215	0.098
SDBK	Sde Boker	A	Titan	30.85377	34.78284	0.508
SHGL	Sha'ar HaGolan	A	Titan	32.68578	35.6041	-0.176
SLMZ	Shlomzion	A	Titan	32.102	35.4918	-0.2445
SLTI	Sal'it	A	Titan	32.2405	35.0403	0.25
		V	Trillium 120	32.2405	35.0403	0.25
SPR	Sapir Facility	A	Titan	32.86455	35.53926	-0.208
TVR	Teveria	A	Titan	32.78123	35.53968	-0.1639
VJRH	Vered Jericho	A	Titan	31.8263	35.4312	-0.1342
YFRK	Road 90 - Yafruk	A	Titan	30.19418	35.12984	0.25
YFTH	Yiftach	A	Titan	33.1274	35.551	0.4251
YGR	Yagur	A	Titan	32.73935	35.07533	0.0576
YHL	Yahel	A	Titan	30.0836	35.1288	0.198
YITV	Yitav	A	Titan	31.9466	35.4233	-0.0974
YTVT	Yotvata	A	Titan	29.8921	35.0591	0.092
ZEFT	Zefat	A	Titan	32.96884	35.49362	0.795
ZFRI	Zofar	A	Titan	30.5654	35.1785	-0.037
		V	Trillium 120	30.5654	35.1785	-0.037
ZRT	Zar'it	A	Titan	33.1015	35.2902	0.651
ZUKM	Zukim	A	Titan	30.4915	35.1668	0.046

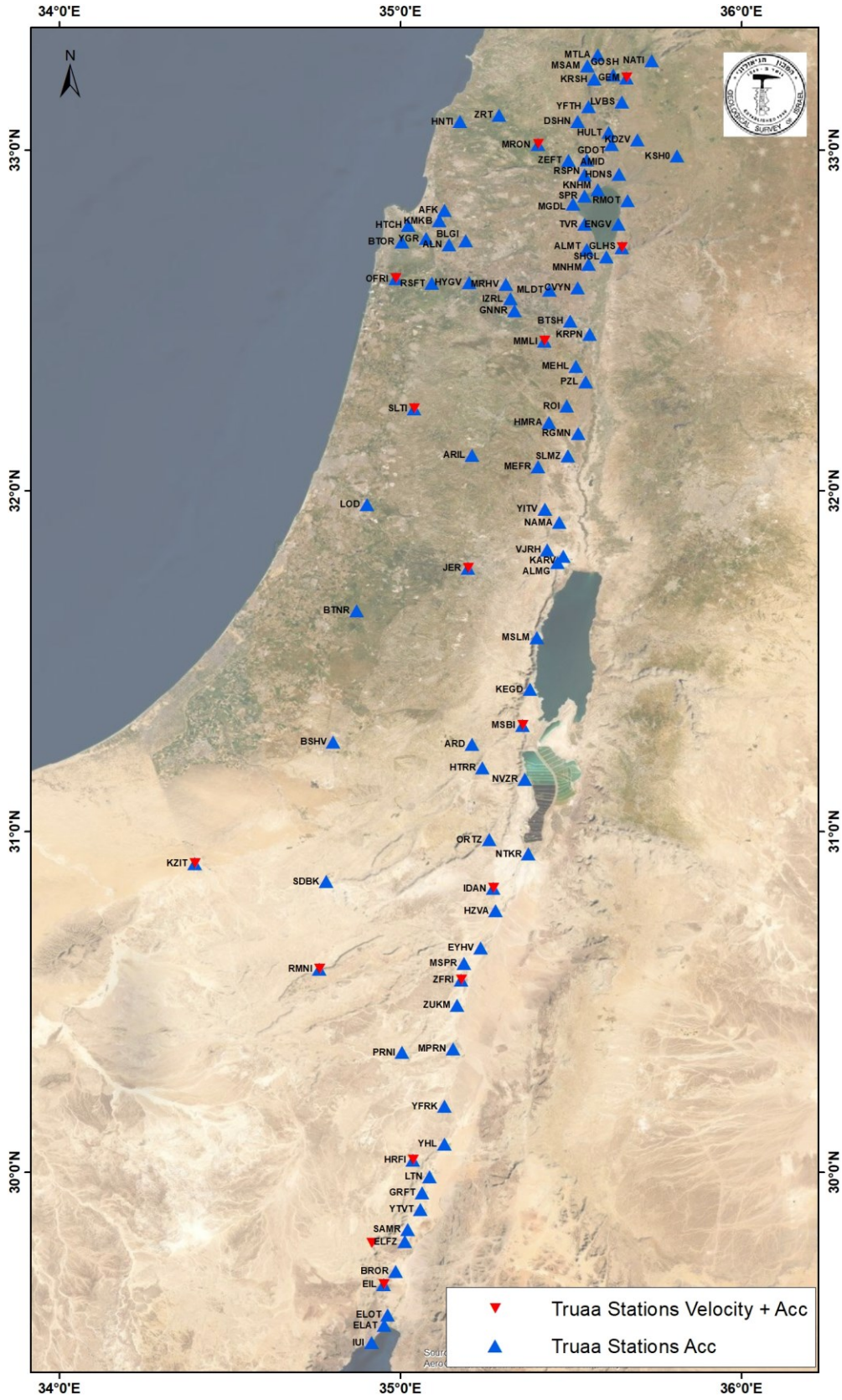


Figure 5. TRUAA seismic network stations

DATA PROCESSING

The geographic region, which is covered in this bulletin is within 27.0-36.0°N in latitudes and 32.0-38.0°E in longitudes, and is subdivided into seismogenic zones, identifying different geographical regions. For reference, the seismogenic zones are provided in the map shown in Figure 6, following the report of Shamir et al. (2001) and are also indicated in the list of earthquakes (Appendix A) and phase files (Appendix C).

The bulletin comprises 1,141 local and regional seismic events that occurred in the vicinity of Israel and were detected by at least three stations. However, it is possible that few of the events were man-made activities that we could not clearly identify. Six local and one regional earthquakes were reported as felt ones and their source parameters are shown in Table 5. Maps of epicenters of local and regional earthquakes with magnitude greater than 2 are shown in Figures 8 and 9.

Table 5. Source parameters of felt events

Date			Time			Magnitude		Depth km	Geographic coordinates		Source parameters			Seismogenic zone
Year	Month	Day	Hour	Min.	Sec.	Md	Mw		Lat	Long	Moment, Nm	Stress drop, Mpa	Radius, km	
2019	1	15	15	59	55.2	3.8	3.5	16	29.4669	34.9730	2E+14	2.502	0.333	Arava
2019	1	24	20	4	58.8	3.3	3.3	4	32.7772	35.3176	1.10E+14	1.439	0.352	Galilee
2019	5	15	16	53	49.6	4.5	4.5	14	32.7670	32.8090	6.9E+15	45.466	0.422	E.Mediter.Sea
2019	6	26	8	53	42.1		3.8	5	31.1750	35.4944	7.10E+14	3.163	0.523	Dead-Sea-Basin
2019	6	29	5	43	17.7		3.1	1	31.9826	35.2250	5.00E+13	0.471	0.372	Judea-Samaria
2019	11	1	18	40	41.3	3.1	3.1	5	32.8877	35.5758	6.20E+13	0.223	0.52	Hula-Kinneret

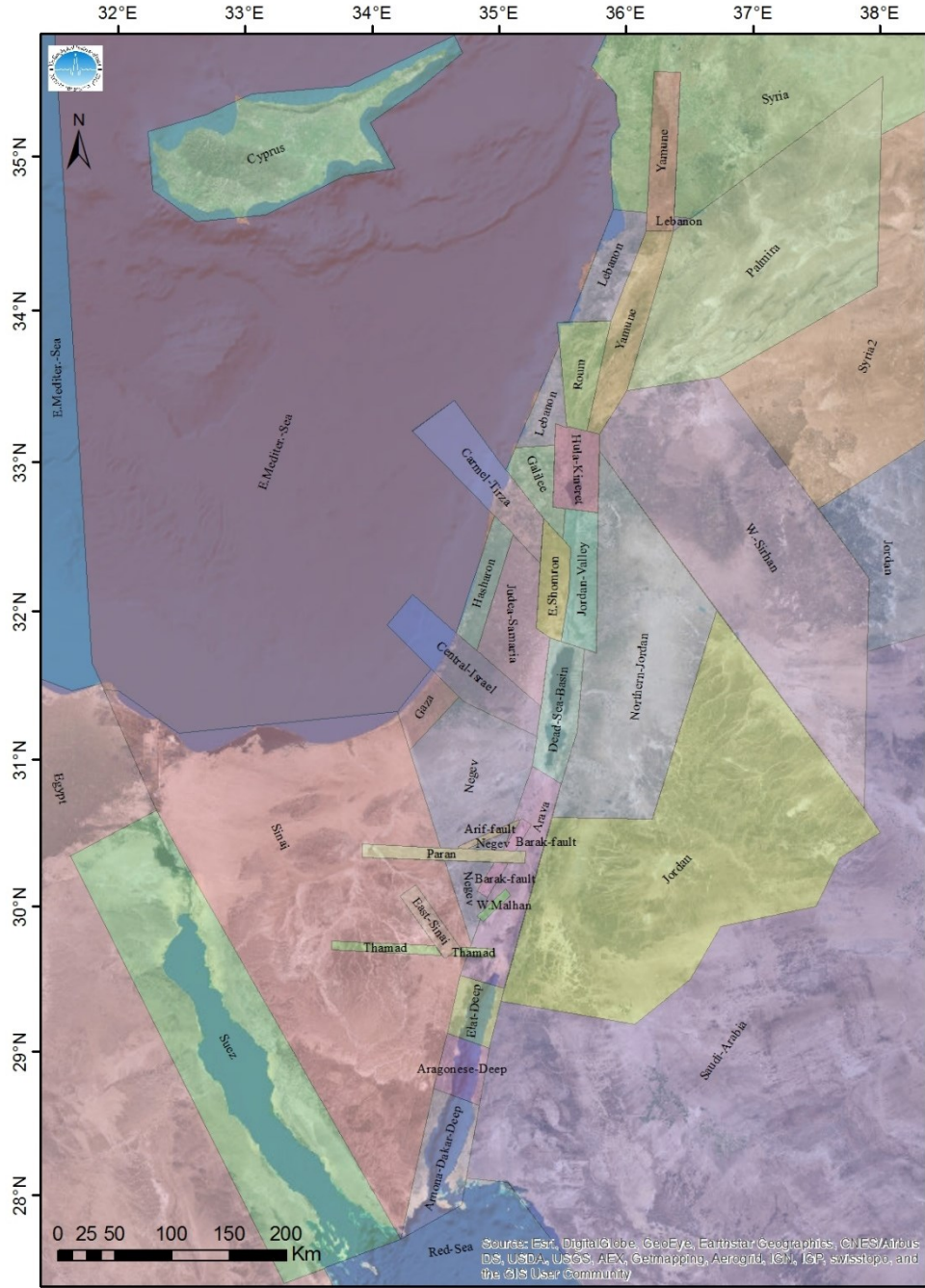


Figure 6. Seismogenic zones

Hypocenter location

The Java-tool for Seismic Traces Analyses and Research (JSTAR) software package (Polozov and Pinsky, 2007), was used for picking, location and magnitude determination. For local events and explosions, the local velocity model (Table 6), suggested by Feigin & Shapira, 1992, was applied, and for the location of regional and teleseismic events the IASPEI91 travel time model (Kennett and Engdahl, 1991) was used, with the upper (over Moho) levels substituted by the local velocity model. For local events location the geometric ray-tracer (Feigin & Shapira, 1992) was applied, for regional the standard TTIMES utility and for teleseismic events the table of travel times computed by TTIMES with the step of 1° and fixed 10 km depth.

Table 6. Local velocity model used for event location

P velocity km/s	S velocity km/s	Layer thickness km
4.36	2.41	2.6
5.51	3.10	7.2
6.23	3.60	21.64
7.95	4.45	100.0
8.15	4.58	1000.0

Mislocation estimation

The procedure for evaluation of uncertainties associated with hypocentral parameters used here is based on calculation of the covariance matrix using the Singular Value Decomposition (SVD) method (Klein 1978; Lee and Stewart, 1981). The stability level evaluated by a "condition number" (Buland, 1976), calculated for each event, serves as a further independent estimate of the overall uncertainties of the parameters determined: it facilitates the identification of the effects of network geometry on the hypocentral determinations. In Israel, this effect is particularly significant since many earthquakes occur outside the network, i.e. in the Dead Sea rift and the Mediterranean offshore.

Magnitude determination

The coda magnitude is determined from coda duration measurement (Shapira, 1988):

$$M_d = -0.6 + 2.0 \log(t) + 0.0015R$$

where R is the epicentral distance in km ($R > 25$) and t is the duration in seconds from the arrival of the S wave until the peak-to-peak amplitude of the signal decays below a value of 0.5 microns per second at 1 Hz. The earthquake magnitude is the average value obtained from all stations, providing measurable coda duration. The magnitude scatter is usually less than 0.2.

The body-wave magnitude is determined from the coda duration (Shapira, 1988)

$$m_b = 0.6 + 1.54 * \log t + 0.0012R$$

being applicable for $m_b > 4.0$ and $R \geq 100$ km. The moment magnitude M_w is

$$M_w = \frac{2}{3} (\log_{10} M_o - 9.1)$$

where M_o is the seismic moment in N/m, and the constant values in the equation are chosen to achieve consistency with the magnitude values produced by earlier scales (Shapira and Hofstetter, 1993; Ataeva et al., 2015).

Fault Plane Solution/Moment Tensor

We solve the focal mechanism solutions for all earthquakes of $M_w \geq 3.5$ using the full-waveform TDMT technique by Dreger and Helmberger (1993) implemented at the Geological Survey of Israel. The algorithm inverts three component waveforms to estimate moment tensor in a point-source approximation, decomposing them into a scalar seismic moment, a double-couple moment tensor (DC) and a compensated linear vector dipole moment tensor (CLVD). The isotropic component is set to be zero. Synthetic seismograms are represented as linear combination of ten fundamental Green's functions that form the basis functions for any arbitrarily oriented DC mechanism. Here, the Green's functions are computed by using the frequency-wavenumber integration code (FKPROG) of Saikia (1994) for six layered, regionally calibrated velocity structures of the region (Table 6). We calculate the Green's functions at 5 km horizontal intervals (from 5 to 400 km) and at 1 km vertical intervals from 1 to 40 km. Focal depth is constrained from the inversion, calculated over various depths, searching for the maximum in variance reduction (fit between the waveforms and the synthetics). We use velocity waveforms from broad-band and short-period three component stations provided by the Israeli Seismic Network. Data are extracted in 100 s windows starting 60 s before the event origin time, corrected for instrument response and the horizontal components are rotated to great circle path (Radial and Transversal components). Finally, data and Green's functions are filtered by applying a band-pass filter in the frequency band of 0.05–0.1 Hz for earthquakes with $M_w < 4$, and 0.02–0.1 Hz for earthquake with magnitudes

of $4 \leq M_w \leq 5$, in order to capture the low frequency seismic energy content (Scognamiglio et al., 2009). The best result is achieved by performing a grid-search on the depth, and choosing the moment tensor solution and centroid depth for which the variance reduction (VR) is at maximum.

The events, for which the fault-plane solutions were estimated, are listed in Table 7. Moment tensor solutions for these local earthquakes are shown in Appendix B.

Table 7. List of the local earthquakes for which fault-plane solutions were estimated

No	Date			Origin time (UTC)			Magnitude		Depth , km	Geographic coordinates		Seismogenic zone	Type
	Year	Month	Day	Hour	Min	Sec.	Md	Mw		Lat	Long		
1	2019	1	24	20	4	58.8	3.3	3.3	4	32.7772	35.3176	Galilee	Felt
2	2019	5	15	16	53	49.6	4.5	4.5	14	32.7670	32.8090	E.Mediter.Sea	Felt
3	2019	6	26	8	53	42.1		3.8	5	31.1750	35.4944	Dead-Sea-Basin	Felt
4	2019	11	1	18	40	41.3	3.1	3.1	5	32.8877	35.5758	Hula-Kinneret	Felt

Magnitude of completeness estimation

Magnitude of completeness (M_c) and b value for seismicity inside the seismic network coverage and for the entire 2019 catalog is computed iteratively from the goodness of fit between observed and theoretical Gutenberg–Richter distributions using a Kolmogorov–Smirnov test with b value from maximum likelihood estimation (see Figure 7). We select M_c for the minimum difference between the distributions is negligible. More specifically, we use the minimum as the definition of goodness of fit from the Kolmogorov–Smirnov metric distance between the two cumulative distribution functions. The determined Gutenberg–Richter distributions with estimated M_c indicate the $b \approx 1.0$ for the seismicity recorded inside the network with a completeness magnitude level of $M_c=1.7$.

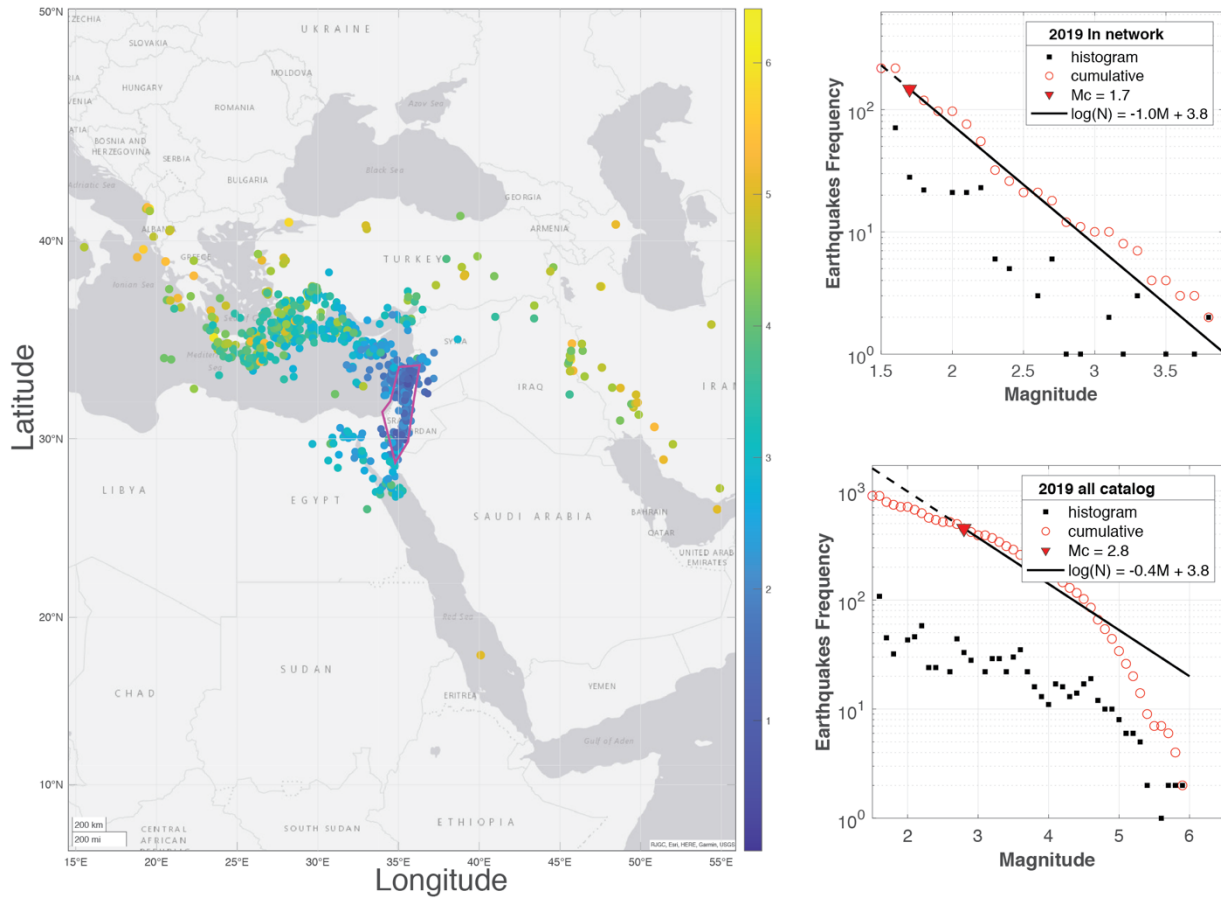


Figure 7. Magnitude of completeness estimation. The regional earthquakes are shown on a map view, color by the magnitude, with the seismic network coverage defined by the magenta polygon. The Gutenberg-Richter magnitude distribution is shown for seismicity located in the seismic network (top panel) and for the entire catalog (bottom panel). Number of earthquakes are shown in a cumulative (red dots) and in a 0.1 bin (block squares) fashion, with the magnitude of completeness (red triangle). The calculated b-value is plotted for each subset by the equation shown in the legend.

REFERENCES

- Ataeva G., Shapira A., and Hofstetter A., 2015. Determination of source parameters for local and regional earthquakes in Israel, *J. Seis.*, 19:389–401, doi: 10.1007/s10950-014-9472-x.
- Buland, R., 1976. The mechanics of locating earthquakes, *Bull. Seism. Soc. Am.*, 66, 173-187.
- Dreger, D. S., & Helmberger, D. V. (1993). Determination of source parameters at regional distances with three- component sparse network data. *Journal of Geophysical Research*, 98(B5), 8107–8125. <https://doi.org/10.1029/93JB00023>.
- Dreger, D. S., 2003. Time-Domain Moment Tensor INVerse Code (TDMT-INVC) Release 1.1. *International Handbook of Earthquake and Engineering Seismology*, W. H. K. Lee, H. Kanamori, P. C. Jennings, and C. Kisslinger (Editors), Vol. B, p. 1627.
- Fee, D., R. Waxler, J. Assink, Y. Gitterman, J. Given, J. Coyne, P. Mialle, M. Garces, D. Drob, Kleinert, R. Hofstetter, P. Grenard, 2013. Overview of the 2009 and 2011 Sayarim Infrasound Calibration Experiments. *JGR-Atmospheres*, 118, 1–22, DOI: 10.1002/jgrd.50398.
- Feigin, G., and Shapira, A., 1994. A unified crustal model for calculating travel times of seismic waves across the Israel Seismic Network: IPRG Rep. Z, v. 1.
- Gitterman, Y., Pinsky, V., Shapira A., 2003. Improvement in Monitoring the CTBT Middle East by the Israeli Seismic Network, GII Rep. No. 591/61/97(34).
- Hofstetter, A., 1990. SEIS, a seismological data processing software package, Version IV, IPRG Rep. No. Z1/567/79(75).
- Johnson, C.E., 1979. CEDAR – An approach to the computer automation of short period local networks: Ph.D. Dissertation, California Institute of Technology, Pasadena, CA.
- Kennett, B.L.N., Engdahl, E.R., 1991. Traveltimes for global earthquake location and phase identification. *Geophys. J. Int.*, 105, 429-465.
- Kurzon, I., R. N. Nof, M. Laporte, H. Lutzky, A. Polozov, D. Zakosky, H. Shulman, A. Goldenberg, B. Tatham, and Y. Hamiel (2020). The “TRUAA” Seismic Network: Upgrading the Israel Seismic Network—Toward National Earthquake Early Warning System, *Seismol. Res. Lett.* 91, 3236–3255, doi: 10.1785/0220200169.
- Polozov, A. Pinsky V., 2008. Java-tool for Seismic Traces Analysis and Research (JSTAR), Brief Guide Version 1.6, GII Rep.
- Saikia, C. K. (1994). Modified frequency-wavenumber algorithm for regional seismograms using Filon’s quadrature: modelling of Lg waves in eastern North America. *Geophysical Journal International*, 118(1), 142–158. <https://doi.org/10.1111/j.1365-246X.1994.tb04680.x>

- Scognamiglio, L., Tinti, E., & Michelini, A. (2009). Real-Time determination of seismic moment tensor for the Italian region. *Bulletin of the Seismological Society of America*, 99(4), 2223–2242. <https://doi.org/10.1785/0120080104>
- Shamir, G., Y. Bartov, A. Sneh, L. Fleischer, V. Arad and M. Rosensaft, 2001. Preliminary seismic zonation for Israel. GII Rept. No. 550/95/01(1)
- Shapira, A., 1988. Magnitude Scales for Regional Earthquakes Monitored in Israel, *Israel Journal of Earth Sciences*, 37, No. 1, 17-22.
- Shapira, A., Avirav, V., 1990a. ISDA - Israeli Seismic Data Acquisition System User's Guide Version I, IPRG Rep. Z1/567/79(76).
- Shapira, A., Avirav, V., 1990b. ISDA - Israeli Seismic Data Acquisition System User's Guide Version I, IPRG Rep. Z1/567/79(78).
- Shapira, A., Hofstetter, A., 1993. Source parameters and scaling relationships of earthquakes in Israel, *Tectonophysics* 217, 217-226.
- Wetzler, N., Shalev E., Göbel, T., Amelung, F., Kurzon, I., Lyakhovsky, V, and Brodsky, E.E., 2019. Earthquake swarms triggered by groundwater extraction near the Dead Sea Fault. *Geophysical Research Letters*, 46, 8056–8063. <https://doi.org/10.1029/2019GL083491>.

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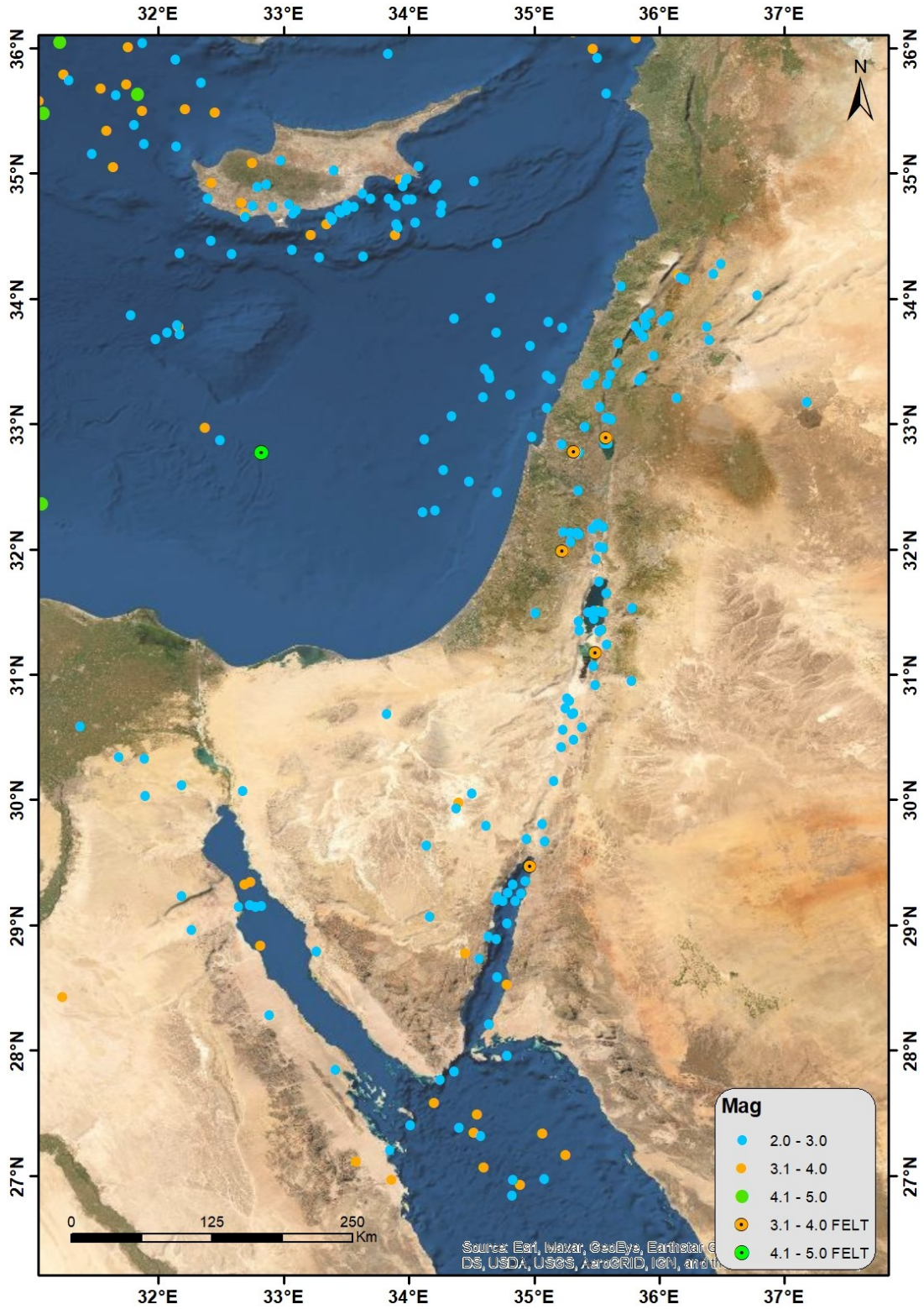


Figure 8. Epicenters of local earthquakes $M_w \geq 2.0$

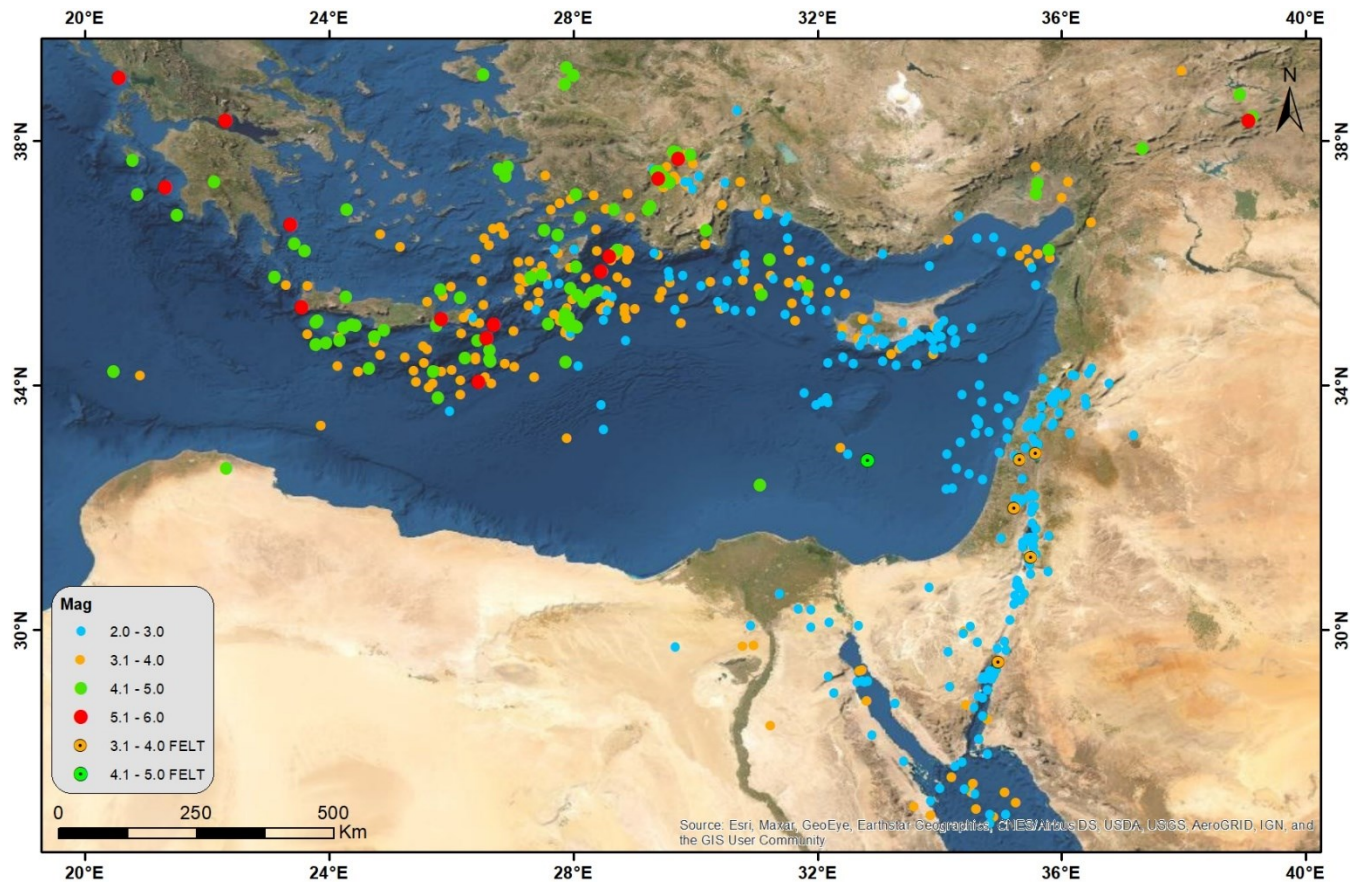


Figure 9. Local and regional earthquakes $M_w \geq 2.0$

APPENDIX A - LIST OF EARTHQUAKES IN THE VICINITY OF ISRAEL

Date			Origin Time (UTC)			Magnitude			Depth	Geographical coordinates		Region	Felt
Year	Month	Day	Hour	Min	Sec	Md	Mb	Mw		Lat	Long		
2019	1	1	1	3	18.1			4.1	5	37.14	20.64		
2019	1	1	11	40	2.8			4.8	10	34.66	23.79	E.Mediter.Sea	
2019	1	1	21	8	27.9			1.2	6	32.8646	35.5798	Hula-Kinneret	
2019	1	2	6	7	45.2			3.6	35	34.8312	23.6497		
2019	1	3	0	48	55.2			1.3	6	32.8372	35.5665	Hula-Kinneret	
2019	1	3	13	6	34.7	2		2.2	3	33.3896	35.6079	Roum	
2019	1	4	2	27	36.4			1.2	14	29.4842	34.867	Arava	
2019	1	4	19	27	37.1			4.7	10	40.2	19.82		
2019	1	5	17	40	58.6			1.6	5	33.5976	34.6331	E.Mediter.Sea	
2019	1	6	13	41	59.6			5.8	26	34.131	45.672		
2019	1	7	13	58	50			1.8	1	29.1188	34.7087	Eilat-Deep	
2019	1	7	23	55	5	2.8		2.8	20	30.112	32.1859	Suez	
2019	1	8	0	49	42.2			1.9	5	32.834	35.5892	Hula-Kinneret	
2019	1	8	2	32	35.5			1.4	18	30.3906	35.2836	Arava	
2019	1	8	2	44	12			1.3	16	30.3956	35.2802	Arava	
2019	1	8	6	45	37.9			3	10	35.71	31.75	E.Mediter.Sea	
2019	1	10	15	4	17.3			3.5	18	34.31	26.63	E.Mediter.Sea	
2019	1	10	18	24	36.6	4.5	4.5	4.8	16	34.4159	26.6294	E.Mediter.Sea	
2019	1	10	18	35	21			4.8	10	34.5693	26.6257	E.Mediter.Sea	
2019	1	10	18	50	16			1.3	1	32.8866	35.1801	Galilee	
2019	1	10	23	3	47.9			3.1	8	34.3477	26.8826	E.Mediter.Sea	
2019	1	12	1	16	55.8			3.1	8	35.3975	27.987	E.Mediter.Sea	
2019	1	12	7	23	2.6	4	4.2	4.0	2	36.48	28.08	E.Mediter.Sea	
2019	1	12	23	25	45.5			2.2	12	34.7082	33.1035	Cyprus	
2019	1	13	1	20	1.9			2	1	33.603	35.7956	Yamune	
2019	1	13	22	27	8.7			3.1	60	35.7638	28.7339	E.Mediter.Sea	
2019	1	14	18	18	1.6			4.3	10	33.93	45.51	Iraq	
2019	1	15	0	56	22.9			4	10	34.06	45.56		
2019	1	15	15	59	55.2	3.8		3.5	16	29.4669	34.973	Arava	F
2019	1	16	3	34	23.8			1.4	5	32.9042	35.5867	Hula-Kinneret	
2019	1	16	18	7	59.9			2	15	32.1789	35.5502	E.Shomron	
2019	1	16	18	19	54.2	2.2		2.4	22	32.0122	35.5454	Jordan-Valley	
2019	1	16	18	21	9.6			2.2	23	32.0161	35.5151	E.Shomron	
2019	1	16	20	10	57.1			1.2	2	32.9442	35.3064	Galilee	
2019	1	16	20	21	23.6			0.8	2	33.0228	35.3478	Galilee	
2019	1	17	1	14	49			0.6	5	32.8636	35.5777	Hula-Kinneret	

2019	1	17	12	15	26.1			2.3	20	36.0847	35.4581	E.Mediter.Sea	
2019	1	18	6	48	15.1			1.9	1	33.2285	33.0887	E.Mediter.Sea	
2019	1	18	12	52	16.2			1.3	8	33.5926	35.2599	E.Mediter.Sea	
2019	1	18	20	42	23.7	2.6		2.6	60	35.1042	32.9751	Cyprus	
2019	1	19	6	5	15			1.3	3	33.1502	35.3459	Lebanon	
2019	1	19	6	18	13.5			1.9	12	29.9221	34.9485	Arava	
2019	1	19	14	57	56.1			3	40	33.7737	32.1658	E.Mediter.Sea	
2019	1	19	18	56	39			1.6	1	33.1125	34.6809	Carmel-Tirza	
2019	1	20	6	9	48.2			1.8	1	31.1189	35.4137	Dead-Sea-Basin	
2019	1	20	15	32	24.7			3.6	40	35.4331	28.2446	E.Mediter.Sea	
2019	1	20	15	49	53.7	4.7	4.7	4.9	60	35.5014	28.3082	E.Mediter.Sea	
2019	1	22	12	33	45.2	3.9	4.1	3.8	40	34.36	25.5583	E.Mediter.Sea	
2019	1	22	20	12	2	4.5	4.6	4.5	25	36.7402	28.1045		
2019	1	22	23	38	50.5			0.8	18	32.9843	35.5586	Hula-Kinneret	
2019	1	23	5	33	57.4			2.3	5	32.8456	35.5739	Hula-Kinneret	
2019	1	23	20	55	30.8			1.6	16	32.4218	35.5702	Jordan-Valley	
2019	1	23	21	36	47.4			1.6	16	32.4193	35.5894	Jordan-Valley	
2019	1	23	21	48	11.4	2.4		2.4	2	32.8427	35.5638	Hula-Kinneret	
2019	1	24	4	2	45.7			1.2	6	32.8528	35.5632	Hula-Kinneret	
2019	1	24	6	20	7.1			3.4	1	36.0479	28.8892	E.Mediter.Sea	
2019	1	24	14	30	54.9			5.2	100	35.8623	28.4451	E.Mediter.Sea	
2019	1	24	20	4	58.8	3.3		3.3	4	32.7772	35.3176	Galilee	F
2019	1	25	20	20	31.1			4.5	7	38.56	27.08		
2019	1	26	3	50	21.8			2	1	28.8717	34.9678	Saudi-Arabia	
2019	1	27	5	4	19.3			0.9	10	32.8581	35.5752	Hula-Kinneret	
2019	1	27	23	30	8			3	20	35.4368	28.6481	E.Mediter.Sea	
2019	1	28	0	19	13			2.7	31	35.038	28.5131	E.Mediter.Sea	
2019	1	28	10	1	5.5			2	16	33.0054	34.7181	Carmel-Tirza	
2019	1	28	18	44	26.5	3.2		3.3	3	28.8343	32.8153	Suez	
2019	1	28	20	12	1.5				18	32.9376	35.3113	Galilee	
2019	1	29	19	3	42.2			2	9	34.7941	33.9882	E.Mediter.Sea	
2019	1	30	2	43	8.4			2.8	20	33.5737	25.9768	E.Mediter.Sea	
2019	1	30	16	24	24.8			1.5	31	33.6188	34.6034	E.Mediter.Sea	
2019	1	31	1	15	44.2			0.9	25	32.9882	35.5842	Hula-Kinneret	
2019	1	31	6	25	54.7	2		2.2	5	32.8443	35.5786	Hula-Kinneret	
2019	1	31	11	43	19.8	2.5		2.5	4	32.8461	35.5733	Hula-Kinneret	
2019	1	31	17	0	27.4			1.8	14	33.8004	35.0778	E.Mediter.Sea	
2019	2	1	7	57	12.5	0.6		1.7	3	32.1231	35.3515	E.Shomron	
2019	2	1	10	29	48.7			4.6	40	35.77	27.3	E.Mediter.Sea	
2019	2	2	12	3	52.9			1.8	5	32.8677	35.5782	Hula-Kinneret	
2019	2	2	12	20	39.1	4.4	4.5	4.3	1	37.1265	35.5759	Turkey	

2019	2	2	14	9	22.3	4	4.2	4.1	20	34.6862	23.9468	E.Mediter.Sea	
2019	2	2	21	39	18.2			1.5	6	32.128	35.3561	E.Shomron	
2019	2	3	20	10	3.2			3.2	40	35.6861	27.2274	E.Mediter.Sea	
2019	2	4	0	47	10.9			3.2	16	34.7991	24.7291	E.Mediter.Sea	
2019	2	4	0	59	47.4			1.2	20	32.8334	35.6408	Hula-Kinneret	
2019	2	4	11	41	29.9			2.7	30	35.0222	33.3978	Cyprus	
2019	2	5	2	26	5.2	5.3	5.2	5.4	10	39.02	20.56		
2019	2	5	4	59	59			2.1	16	31.7392	35.5181	Dead-Sea-Basin	
2019	2	5	11	5	20.8			3	100	37.0396	31.1583	Turkey	
2019	2	5	15	11	55	4.3	4.4	4.4	40	36.5313	30.178	Turkey	
2019	2	5	18	55	34.2			1.1	8	33.1381	35.7731	Hula-Kinneret	
2019	2	5	19	31	40.5			5.1	8	40.78	48.46		
2019	2	6	4	35	46.1			1.1	4	32.8146	35.4707	Hula-Kinneret	
2019	2	6	10	49	10.5			1.8	2	29.1387	34.4332	Sinai	
2019	2	6	12	4	38.8			2.6	30	34.39	33.07	E.Mediter.Sea	
2019	2	7	10	27	46			1.2	1	32.7974	35.541	Hula-Kinneret	
2019	2	8	0	48	40.1			2.8	30	34.73	33.56	E.Mediter.Sea	
2019	2	8	2	36	16.7			1	19	33.115	35.6174	Hula-Kinneret	
2019	2	8	6	19	19.9	0.7		1.7	5	32.839	35.5647	Hula-Kinneret	
2019	2	9	16	49	28	2.5		2.3	40	34.95	33.97	Cyprus	
2019	2	9	20	49	49.8	1.6		1.7	5	32.8869	36.2413	W.Sirhan	
2019	2	9	21	26	22			4.8	10	31.67	49.56		
2019	2	10	3	1	57.6			1.7	5	32.8995	35.6686	Hula-Kinneret	
2019	2	10	6	18	50.8			1.1	7	32.7588	35.6893	Hula-Kinneret	
2019	2	10	20	17	48.7			1.7	1	34.0938	36.6246	Palmira	
2019	2	11	2	11	19			2	1	28.584	34.7058	Arnona-Dakar-Deep	
2019	2	11	16	38	2.5			3.8	10	36.2004	28.8234	E.Mediter.Sea	
2019	2	11	17	51	57.4			2.7	11	33.6728	28.462	E.Mediter.Sea	
2019	2	11	22	35	5.3			2.1	15	34.75	33.04	Cyprus	
2019	2	12	2	9	11	2.4		2.5	8	31.5263	35.7807	Northern-Jordan	
2019	2	12	10	56	16			2.6	10	34.4606	32.4197	E.Mediter.Sea	
2019	2	12	17	14	33			4.8	7	40.57	33.03	Turkey	
2019	2	13	10	10	17.3			1.1	13	33.081	35.7551	Hula-Kinneret	
2019	2	13	10	11	54.7			2	1	33.2309	35.2	Lebanon	
2019	2	13	13	29	18.2			2	14	32.4517	34.703	E.Mediter.Sea	
2019	2	13	13	32	42.1	2.1		2.3	5	33.3171	35.4164	Lebanon	
2019	2	13	21	13	3.3			1.6	6	33.3154	35.4161	Lebanon	
2019	2	14	0	19	16.8			1.5	1	33.305	35.4214	Lebanon	
2019	2	14	2	28	30.1			2	10	34.9586	33.9889	Cyprus	
2019	2	16	1	57	9			4.2	1	37.6801	20.7851		
2019	2	17	0	24	5			2.4	30	34.9342	34.5219	E.Mediter.Sea	

2019	2	17	0	27	49.4			1.4	18	30.0226	35.0851	Arava	
2019	2	17	5	25	1.4			1.6	1	33.5399	35.1294	E.Mediter.Sea	
2019	2	17	9	8	53.4			3.5	19	35.9433	27.4992	E.Mediter.Sea	
2019	2	17	19	7	48.9			4.9	10	36.1942	23.6029		
2019	2	17	23	0	11.6			2.1	4	32.1646	35.4645	E.Shomron	
2019	2	18	3	46	44			4.1	10	34.73	24.1778	E.Mediter.Sea	
2019	2	20	5	35	20.2	4.1	4.3	4.2	1	36.2121	35.7805	E.Mediter.Sea	
2019	2	20	10	43	29.5	4.2	4.3	4.1	40	34.7949	24.7399	E.Mediter.Sea	
2019	2	20	12	26	34			1.7	16	33.585	34.9187	E.Mediter.Sea	
2019	2	20	18	23	33.7	4.9	4.9	5.1	8	39.0807	26.5252		
2019	2	21	1	6	49.8			3.7	40	35.4221	29.4231	E.Mediter.Sea	
2019	2	21	2	19	37.4			4.4	10	32.6387	22.3227		
2019	2	21	12	15	16			2.1	5	33.3549	35.1346	E.Mediter.Sea	
2019	2	21	12	20	20.1			2.1	8	33.386	35.1046	E.Mediter.Sea	
2019	2	21	23	56	13.8			1	1	32.8925	35.3572	Galilee	
2019	2	22	0	24	42.1			3.3	4	37.1044	28.3448	Turkey	
2019	2	22	17	5	24.2			3.3	10	35.8445	27.3782	E.Mediter.Sea	
2019	2	22	18	0	23.7			4.2	3	41.1781	38.8306		
2019	2	23	2	6	21.2			3.6	10	34.58	23.93	E.Mediter.Sea	
2019	2	24	14	30	13.6			3.5	15	36.06	26.41	E.Mediter.Sea	
2019	2	27	5	42	52.6			4.7	10	33.74	47.6		
2019	2	28	1	22	46.4			3.5	8	34.0305	26.6678	E.Mediter.Sea	
2019	2	28	19	57	24.5	3.2		3	6	27.3365	35.07	Red-Sea	
2019	3	2	8	42	14.5			2.5	10	36.4091	34.8879	E.Mediter.Sea	
2019	3	2	22	39	58.2	1.8		1.9	16	30.4714	35.3097	Arava	
2019	3	3	7	51	35.4	2.2		2.2	16	30.4763	35.3126	Arava	
2019	3	4	23	12	41.7			3	10	35.9962	35.4717	E.Mediter.Sea	
2019	3	6	4	50	6.3			1.6	16	29.5007	34.8159	Arava	
2019	3	6	4	50	14			1.5	11	29.5274	35.0606	Arava	
2019	3	6	19	54	12.9			5	10	17.78	40.09	Red-Sea	
2019	3	6	21	32	52.5			3.4	40	35.0829	32.7511	Cyprus	
2019	3	7	14	2	38.4			2	1	33.7653	35.229	E.Mediter.Sea	
2019	3	7	16	25	39.4	4.2	4.3	3.8	20	35.4797	31.0812	E.Mediter.Sea	
2019	3	7	20	53	3.3			1.7	5	33.1134	35.7128	Hula-Kinneret	
2019	3	10	23	0	45			0.9	10	32.9482	35.5559	Hula-Kinneret	
2019	3	11	12	12	5.9			1.8	20	32.8895	35.0103	Carmel-Tirza	
2019	3	12	1	22	46.5			1.6	3	33.5675	35.1582	E.Mediter.Sea	
2019	3	12	5	3	20.6	3.7		3.7	14	34.6385	25.5481	E.Mediter.Sea	
2019	3	12	21	34	27.4			2.1	5	33.3728	35.8629	Yamune	
2019	3	12	23	52	53.3			1.2	10	32.8657	35.4908	Hula-Kinneret	
2019	3	13	0	13	45.6			2.3	10	35.0536	34.0759	Cyprus	

2019	3	13	8	12	53.4			2.6	30	28.2765	32.8855	Suez	
2019	3	14	8	46	53.7	2.1		2.1	14	30.1512	35.1517	Arava	
2019	3	15	0	7	19.8	3.7		3.4	45	35.49	25.28	E.Mediter.Sea	
2019	3	15	15	2	23.1			3	80	33.2692	28.5003	E.Mediter.Sea	
2019	3	15	23	21	14			0.5	3	33.2849	35.6687	Roum	
2019	3	16	8	50	10.1	4.3	4.4	0	51	34.35	26.39	E.Mediter.Sea	
2019	3	17	17	41	34			3.8	20	34.4478	25.2583	E.Mediter.Sea	
2019	3	18	15	8	47.4	1.9		2.1	8	33.2064	36.141	W.Sirhan	
2019	3	18	19	34	50.2			2.8	40	34.7235	28.8626	E.Mediter.Sea	
2019	3	18	21	18	30			3.2	10	34.6787	32.6892	Cyprus	
2019	3	18	23	8	28.8			2.1	1	33.7875	35.8939	Yamune	
2019	3	19	0	16	37.8			2.6	20	35.2785	30.49	E.Mediter.Sea	
2019	3	19	0	21	57.4			2.8	10	35.2237	30.6523	E.Mediter.Sea	
2019	3	19	1	31	43.4			0.9	8	32.8521	35.5955	Hula-Kinneret	
2019	3	19	2	2	25.1			0.9	18	33.03	35.2729	Galilee	
2019	3	19	5	55	54.8			1.4	16	32.9694	35.6431	Hula-Kinneret	
2019	3	19	21	58	3.3			2.5	10	34.7392	32.7503	Cyprus	
2019	3	19	23	24	12.4			2	1	32.4965	34.9039	E.Mediter.Sea	
2019	3	20	1	41	48.4			3.7	10	37.4208	29.4842	Turkey	
2019	3	20	6	34	29.5			5.7	40	37.3795	29.3896	Turkey	
2019	3	20	6	51	58.7			4	3	37.4083	29.4885	Turkey	
2019	3	20	7	20	22.9			3.4	2	37.3954	29.4425	Turkey	
2019	3	20	8	0	27			3.9	10	37.41	29.41	Turkey	
2019	3	20	12	45	42.7			4.2	1	37.3251	29.4462	Turkey	
2019	3	20	14	20	1.9			3.4	1	37.366	29.4511	Turkey	
2019	3	20	14	55	29.6			1.7	5	32.8593	35.573	Hula-Kinneret	
2019	3	20	17	4	17			4	7	37.3863	29.4659	Turkey	
2019	3	20	17	42	58.5			4.3	25	37.3051	29.574	Turkey	
2019	3	20	18	41	57.2			3.8	40	37.2382	29.4856	Turkey	
2019	3	21	1	21	59.5			3.6	12	37.4542	29.4657	Turkey	
2019	3	21	3	15	2.5			3.5	8	37.4591	29.4099	Turkey	
2019	3	21	5	51	24.7			4.6	1	38.7529	38.9176	Turkey	
2019	3	21	16	41	11.5			3.6	10	37.4239	29.4606	Turkey	
2019	3	22	2	43	42			3	30	37.5286	29.3017	Turkey	
2019	3	22	8	20	45.1			3.9	2	37.406	29.4418	Turkey	
2019	3	22	10	4	19.5			3.2	100	36.6686	36.4871	Turkey	
2019	3	22	15	32	49.1			4.1	8	37.3925	29.5154	Turkey	
2019	3	22	18	24	34.2	4.1	4.3		69	35.07	27.99	E.Mediter.Sea	
2019	3	22	21	15	31.3			3.5	10	37.3325	29.6254	Turkey	
2019	3	22	22	40	59.7			3.1	30	35.9315	29.6854	E.Mediter.Sea	
2019	3	23	0	59	41.8			2.9	7	37.43	29.41	Turkey	

2019	3	23	3	9	6.5			1.9	31	33.6077	34.555	E.Mediter.Sea	
2019	3	23	8	46	56.4			3.4	66	36.1547	27.7649	E.Mediter.Sea	
2019	3	23	9	36	15.6			3.2	5	37.5	29.39	Turkey	
2019	3	23	11	33	14.4			1.9	9	31.4574	35.5665	Dead-Sea-Basin	
2019	3	23	23	44	48.6			2.6	40	36.8348	31.1923	Turkey	
2019	3	24	0	26	14.6			3.4	10	37.3709	29.6253	Turkey	
2019	3	24	0	47	19.5			3.2	10	37.4171	29.6491	Turkey	
2019	3	24	11	54	36			2.5	10	36.139	33.0674	Turkey	
2019	3	25	6	15	29.1			3.9	5	37.334	29.6039	Turkey	
2019	3	25	11	29	42.7			4.6	10	37.8743	37.3144	Turkey	
2019	3	25	14	35	32.8			3.5	5	37.4576	29.4064	Turkey	
2019	3	25	16	25	33.1			1.4	20	33.4399	35.5878	Roum	
2019	3	25	20	34	42.5			1.1	18	33.0111	35.61	Hula-Kinneret	
2019	3	25	21	35	48			2.1	1	34.7983	33.6962	E.Mediter.Sea	
2019	3	26	1	28	22.2			3.5	20	37.4014	29.4293	Turkey	
2019	3	26	6	4	36.3			1.6	1	33.2856	34.0825	E.Mediter.Sea	
2019	3	27	4	28	57.9			1.8	1	33.3384	34.6137	Carmel-Tirza	
2019	3	27	6	23	2.7			2.3	2	33.366	34.6442	Carmel-Tirza	
2019	3	27	7	13	23.2			2.3	7	34.0055	34.656	E.Mediter.Sea	
2019	3	27	11	27	6.7	4.4	4.5	4.6	5	36.8638	29.2245	Turkey	
2019	3	27	14	41	8.2			1.1	10	33.707	35.8614	Yamune	
2019	3	27	21	37	25.4	3.1		3.1	10	34.7674	32.6669	Cyprus	
2019	3	27	22	52	21.2			1.2	8	32.8629	35.1146	Carmel-Tirza	
2019	3	28	11	58	47			2.9	1	36.7626	34.3176	Turkey	
2019	3	28	20	14	56.8			3.4	7	37.4812	29.3832	Turkey	
2019	3	28	20	29	30.9			2.6	80	36.4051	31.5119	E.Mediter.Sea	
2019	3	29	0	24	20.7			3.2	7	37.41	29.46	Turkey	
2019	3	29	4	12	12.8			2.1	4	34.6533	33.3733	E.Mediter.Sea	
2019	3	29	20	18	11	1.7		1.8	4	32.8577	35.5748	Hula-Kinneret	
2019	3	30	10	46	16.7			5.3	11	38.33	22.31		
2019	3	30	23	50	8.8			3.2	2	36.38	34.15	Turkey	
2019	3	31	11	30	17.7			4.9	40	37.49	29.39	Turkey	
2019	3	31	11	45	34.2			4	10	37.4407	29.4449	Turkey	
2019	3	31	20	24	50.6			2.3	30	34.5675	33.9121	E.Mediter.Sea	
2019	4	1	1	26	55.2			0.7	10	32.8671	35.6652	Hula-Kinneret	
2019	4	1	1	49	34.2	4.3	4.4	4.5	10	36.9277	29.265	Turkey	
2019	4	1	3	16	53.4			1.6	8	33.3327	35.6139	Roum	
2019	4	1	3	16	55.7			3.4	30	37.3418	29.4596	Turkey	
2019	4	1	10	7	23.7			5.2	40	33.577	45.818		
2019	4	1	10	54	14.7			4.7	10	33.55	45.63	Iraq	
2019	4	2	4	9	11.2			1.6	20	29.4596	34.8917	Eilat-Deep	

2019	4	2	8	0	17.9	4	4.2	0	20	35.6167	23.6488		
2019	4	3	18	53	14.3			2.8	3	36.2234	27.6878	E.Mediter.Sea	
2019	4	4	12	26	6.6	1.5		1.7	11	32.7733	35.5903	Hula-Kinneret	
2019	4	4	15	1	15.3			4.3	6	37.49	29.36	Turkey	
2019	4	4	15	39	7.7			2.9	22	35.11	26.36	E.Mediter.Sea	
2019	4	4	17	31	10			4.9	9	38.39	39.12	Turkey	
2019	4	4	17	52	18			1.4	12	33.3857	35.4358	Lebanon	
2019	4	5	5	18	3.3			1.6	8	33.0249	35.1369	Galilee	
2019	4	5	16	56	0.5			3.3	10	37.381	29.4523	Turkey	
2019	4	5	19	57	59.5			2.1	5	32.8675	32.4937	E.Mediter.Sea	
2019	4	6	3	33	37.1			1.4	3	33.1589	35.8006	W.Sirhan	
2019	4	7	15	6	34.5			3.2	20	36.7874	31.0398	Turkey	
2019	4	8	2	28	20.6			1.5	1	34.1927	36.2218	Yamune	
2019	4	8	6	19	27.7			0.9	5	33.2441	35.7732	Yamune	
2019	4	9	8	22	10.9			3.6	40	35.4122	29.8122	E.Mediter.Sea	
2019	4	9	9	1	4.3			2.4	20	34.5949	33.898	E.Mediter.Sea	
2019	4	10	0	36	18.5			2.5	76	36.67	31.46	E.Mediter.Sea	
2019	4	10	1	14	47.4			0.4	1	32.8618	35.5607	Hula-Kinneret	
2019	4	10	21	2	32.6			3.6	5	37.0689	36	Turkey	
2019	4	12	19	52	9.9			3.5	2	35.53	29.46	E.Mediter.Sea	
2019	4	12	20	5	29			2.8	4	37.5	29.42	Turkey	
2019	4	13	4	18	9.7			1.7	4	33.5705	35.1644	E.Mediter.Sea	
2019	4	13	17	25	12.5			1.5	2	32.1759	35.4796	E.Shomron	
2019	4	13	22	24	14.6			3.4	10	37.4237	27.546		
2019	4	14	8	52	18.8			1.4	20	29.4763	34.8562	Eilat-Deep	
2019	4	14	8	51	11.1			3.3	1	35.6737	29.5872	E.Mediter.Sea	
2019	4	15	17	0	15.4			1.3	6	32.8692	35.5636	Hula-Kinneret	
2019	4	15	17	42	26.8	4	4.2	3.9	10	36.1303	28.7192	E.Mediter.Sea	
2019	4	16	3	8	58.7	2		2.2	4	29.2531	34.8948	Eilat-Deep	
2019	4	17	0	26	5.7			1.2	1	33.0981	35.4563	Hula-Kinneret	
2019	4	17	3	16	15.2			1	4	32.9089	35.6785	Hula-Kinneret	
2019	4	17	5	15	2.4			1.2	4	32.7369	35.2947	Galilee	
2019	4	17	12	48	39			1.8	1	31.1759	35.5757	Dead-Sea-Basin	
2019	4	17	20	3	40.4			4.5	10	33.28	46.53		
2019	4	18	2	10	17.2			2.8	20	35.624	31.6623	E.Mediter.Sea	
2019	4	18	6	22	1	2.8		2.7	17	30.4164	35.2173	Arava	
2019	4	18	13	11	41.6			1.7	20	29.7959	34.446	East-Sinai	
2019	4	18	22	22	24.9	3.9	4.1	0	1	34.1556	20.9088		
2019	4	19	4	48	56.9			1.5	7	32.8414	35.5714	Hula-Kinneret	
2019	4	20	6	36	36.2			3.7	1	35.255	28.8476	E.Mediter.Sea	
2019	4	20	10	32	34.4			3	0	35.3323	28.6058	E.Mediter.Sea	

2019	4	20	16	45	57.3			2.9	45	36.2303	28.0197	E.Mediter.Sea	
2019	4	20	20	34	13.9			2.1	1	34.3281	33.2887	E.Mediter.Sea	
2019	4	22	17	25	43			3	1	33.4853	35.6664	Roum	
2019	4	22	19	36	39.1	4.4	4.5	4.7	0	36.8754	28.6736	Turkey	
2019	4	22	21	28	28.7			2.1	8	32.8407	35.5928	Hula-Kinneret	
2019	4	24	1	8	11.1			2.8	20	35.65	27.59	E.Mediter.Sea	
2019	4	24	11	4	30.7	1.7		1.7	19	32.4849	35.4165	E.Shomron	
2019	4	24	15	5	54.5			2.8	10	35.48	28.52	E.Mediter.Sea	
2019	4	24	15	40	6.6			1.8	9	33.6095	34.5917	E.Mediter.Sea	
2019	4	24	17	20	23			1.3	20	32.976	35.387	Galilee	
2019	4	24	18	11	40.1			1.7	28	34.6052	33.9967	E.Mediter.Sea	
2019	4	24	22	58	33.4			1.1	9	30.2365	35.2276	Arava	
2019	4	25	0	1	16.8			1.2	4	29.8135	35.0033	Arava	
2019	4	25	0	13	9.8			0.8	17	32.4875	35.4198	E.Shomron	
2019	4	25	2	51	41			3.8	18	35.45	25.88	E.Mediter.Sea	
2019	4	25	11	4	16.3			4.3	10	37.33	22.12		
2019	4	25	15	6	9.3			0.8	16	32.8465	35.5318	Hula-Kinneret	
2019	4	25	15	7	4.3			1.5	1	33.5012	35.6338	Roum	
2019	4	25	17	36	33.9			3	80	34.9916	27.8915	E.Mediter.Sea	
2019	4	25	20	12	23.1			2	100	35.7394	31.2837	E.Mediter.Sea	
2019	4	25	22	28	14.6			0.8	9	29.9387	35.3905	Jordan	
2019	4	25	23	32	56.2			2.2	1	27.402	34.012	Red-Sea	
2019	4	26	0	42	32.8			1.5	1	32.4746	36.6263	W.Sirhan	
2019	4	26	0	43	17.8			1.2	10	32.3863	36.8071	W.Sirhan	
2019	4	26	9	16	18.4	4.3	4.4	4.4	1	34.9645	28.0259	E.Mediter.Sea	
2019	4	26	11	0	7.8			1.8	1	33.8886	36.0555	Yamune	
2019	4	26	21	40	51.5	4.3	4.4	4.2	10	34.9704	27.9235	E.Mediter.Sea	
2019	4	26	21	53	41.7	4.2	4.3	4.2	5	34.9499	28.0583	E.Mediter.Sea	
2019	4	27	5	9	0.8	0		2	2	34.1521	36.3081	Palmira	
2019	4	27	5	20	50.5	2.9		2.9	2	34.2041	36.1934	Yamune	
2019	4	27	5	40	17			2.6	20	34.8903	32.7925	Cyprus	
2019	4	28	6	50	12.8			3.3	50	36.0377	28.6284	E.Mediter.Sea	
2019	4	28	9	54	30.5			3.1	6	28.4263	31.2358	Egypt	
2019	4	29	1	15	50.9			1.3	14	30.3568	35.1016	Paran-fault	
2019	4	29	2	27	11			3.4	2	35.75	27.12	E.Mediter.Sea	
2019	4	29	4	43	18.2			4.8	60	35.1629	27.8644	E.Mediter.Sea	
2019	4	29	8	21	59.3			3.1	4	35.0476	31.6425	E.Mediter.Sea	
2019	4	29	9	35	13.8			3.6	8	35.5162	27.4392	E.Mediter.Sea	
2019	4	29	12	7	25.7	3.7		3.8	1	34.1918	36.1516	Yamune	
2019	4	29	18	2	42.5			4.4	10	39.38	26.29		
2019	4	30	19	9	55.1	3.3		0	100	36.26	25.18	E.Mediter.Sea	

2019	5	1	18	7	27.7			3.3	18	34.8613	27.8715	E.Mediter.Sea	
2019	5	3	4	33	15.3			3.6	8	33.8492	26.162	E.Mediter.Sea	
2019	5	3	12	51	52.6			2.5	40	34.9112	32.863	Cyprus	
2019	5	3	13	25	9.6			2	18	32.1194	35.3608	E.Shomron	
2019	5	3	17	35	18.3			1.4	1	32.852	35.5714	Hula-Kinneret	
2019	5	3	18	1	53.2			1.3	20	32.7759	35.2695	Galilee	
2019	5	4	13	39	29.5			3.6	20	35.314	26.5369	E.Mediter.Sea	
2019	5	5	2	8	8.2			1.7	6	32.8523	35.5648	Hula-Kinneret	
2019	5	5	2	10	12.8			1.5	5	32.8462	35.5623	Hula-Kinneret	
2019	5	5	12	19	55.3			1.1	1	33.1767	35.7255	Hula-Kinneret	
2019	5	5	16	28	27.7			1.1	20	32.856	35.6636	Hula-Kinneret	
2019	5	6	8	14	21.1			1.8	1	32.9997	34.7539	Carmel-Tirza	
2019	5	6	18	29	42.8			3.5	21	36.31	40.99	Syria2	
2019	5	6	18	37	24.6			1.4	5	32.8495	35.5598	Hula-Kinneret	
2019	5	7	8	58	47.4			1.4	3	32.8732	35.5671	Hula-Kinneret	
2019	5	7	23	9	58			2.4	16	34.9072	34.2225	E.Mediter.Sea	
2019	5	8	0	40	49.5			1.6	4	33.3156	35.392	Lebanon	
2019	5	8	1	58	34.5			3.9	2	37.3242	36.1054	Turkey	
2019	5	8	8	2	36.3			1.3	20	30.0694	35.1527	Arava	
2019	5	11	10	29	3.1			5.3	10	34.961	45.745	Iraq	
2019	5	11	18	27	9.2			2	16	30.295	35.6447	Jordan	
2019	5	11	19	57	10.5			0.7	6	33.1719	35.6513	Hula-Kinneret	
2019	5	12	6	4	56.2	2.3		2.4	1	29.1935	34.8535	Eilat-Deep	
2019	5	12	18	23	31.8			2.6	60	34.314	28.0794	E.Mediter.Sea	
2019	5	12	21	58	30.7			1.4	1	29.2715	34.8754	Eilat-Deep	
2019	5	12	22	24	8.9			4.9	7	39.1996	27.8825	Turkey	
2019	5	13	11	59	20.7			2.9	33	35.2368	29.6726	E.Mediter.Sea	
2019	5	13	12	44	19.7			1.9	10	31.6867	35.4674	Dead-Sea-Basin	
2019	5	13	13	53	56.3			1.3	10	31.6876	35.4771	Dead-Sea-Basin	
2019	5	13	15	31	31.2			4.6	1	36.7763	21.5111		
2019	5	13	16	57	14.3			5.2	5	37.2377	21.3184		
2019	5	14	6	11	0.1			3.6	40	34.0502	25.4376	E.Mediter.Sea	
2019	5	14	8	9	28.9			3.6	11	32.34	45.6	Iraq	
2019	5	14	8	11	9.6			3.6	11	32.34	45.6	Iraq	
2019	5	14	16	17	52.4			2	20	34.6063	34.0497	E.Mediter.Sea	
2019	5	15	2	54	21.7			2.7	1	28.7272	34.5615	Aragonese-Deep	
2019	5	15	16	53	50.6	4.5	4.6	4.5	19	32.7668	32.8089	E.Mediter.Sea	F
2019	5	15	17	37	35.8			1.3	6	32.8238	35.6029	Hula-Kinneret	
2019	5	16	0	40	41.7			2.1	18	32.8745	34.1263	E.Mediter.Sea	
2019	5	16	14	42	43.7			1.1	1	32.9474	35.6143	Hula-Kinneret	
2019	5	16	16	46	33.2	2		2.2	1	33.8178	36.0254	Yamune	

2019	5	16	23	23	12.2			2.3	10	34.4421	34.7072	E.Mediter.Sea	
2019	5	17	0	46	1.6	2.3		2.3	12	31.4396	35.4785	Dead-Sea-Basin	
2019	5	17	2	15	46.1			1.1	18	32.9219	35.6068	Hula-Kinneret	
2019	5	17	14	2	8.3	2		2.1	14	29.803	35.0624	Arava	
2019	5	17	15	19	49.9			1.9	3	32.8857	36.2515	W.Sirhan	
2019	5	17	17	33	34.5			1.7	8	29.8721	34.4606	East-Sinai	
2019	5	18	1	1	2.8			3.5	2	36.7171	21.1005		
2019	5	18	6	3	35.2			1.5	6	29.8076	34.9779	Arava	
2019	5	18	6	43	45.2			1.2	8	29.8047	35.0033	Arava	
2019	5	18	7	48	19.6			4.6	10	29.7	52		
2019	5	18	19	32	10.5			1	18	30.4084	35.156	Arava	
2019	5	18	20	54	3.5			1.8	2	33.6425	35.9054	Yamune	
2019	5	19	11	34	25.6			3.8	8	36.8701	27.6362		
2019	5	19	14	47	35.6			1.6	6	32.8061	35.5784	Hula-Kinneret	
2019	5	19	19	54	20.3	3.4		3.6	6	35.2571	27.8983	E.Mediter.Sea	
2019	5	19	21	3	49.9			1.1	7	29.7709	35.0211	Arava	
2019	5	20	0	22	58.5			1.7	6	32.8114	35.5829	Hula-Kinneret	
2019	5	20	15	28	4.5			3.4	18	33.1303	27.8992	E.Mediter.Sea	
2019	5	20	16	57	16.5			1.8	5	32.8763	34.6835	E.Mediter.Sea	
2019	5	21	15	0	22.9	2.9		0	31	30.0897	31.5753	Egypt	
2019	5	21	15	4	6.2			1.5	8	30.3666	35.1797	Paran-fault	
2019	5	21	15	5	45.6			3.9	1	27.0658	34.5991	Red-Sea	
2019	5	21	22	26	7.8	3.4		3.5	1	35.3674	25.6202	E.Mediter.Sea	
2019	5	22	8	23	1.8			2.5	10	27.1054	33.8233	Red-Sea	
2019	5	22	14	6	24.2			3	20	35.6757	31.5435	E.Mediter.Sea	
2019	5	23	19	36	23.6			1.6	10	33.5961	34.7493	E.Mediter.Sea	
2019	5	23	23	1	3.6			1.1	20	32.5396	35.4993	Galilee	
2019	5	24	0	55	23.7			1.8	16	31.9396	35.6379	Jordan-Valley	
2019	5	24	23	39	34.7			1.2	20	30.5348	35.2685	Arava	
2019	5	25	2	31	8.9			2.9	60	35.657	27.7736	E.Mediter.Sea	
2019	5	25	5	0	40.9			3.6	40	36.9741	27.7805		
2019	5	25	8	50	45	2.3		2.4	20	30.7901	35.2816	Arava	
2019	5	25	8	56	55.7	2.1		2.2	25	30.8079	35.2609	Arava	
2019	5	25	9	22	6.1			1.3	16	30.8404	35.3369	Arava	
2019	5	25	18	26	46.6			4.2	10	34.56	45.69		
2019	5	25	19	58	5.5			1.2	19	32.8679	35.0876	Carmel-Tirza	
2019	5	26	2	1	39.1			1.8	10	30.3612	34.6853	Paran-fault	
2019	5	26	10	50	28.9			3.7	12	35.2286	28.4549	E.Mediter.Sea	
2019	5	26	11	0	21	3.2		0	20	35.2683	28.4941	E.Mediter.Sea	
2019	5	26	12	7	11.7			4.4	15	37.1118	28.038		
2019	5	26	20	7	36.2			2.4	80	36.0382	31.8749	E.Mediter.Sea	

2019	5	26	20	18	16.7			1.6	3	33.0559	36.8489	W.Sirhan	
2019	5	26	20	41	43			1.5	1	29.1963	34.6938	Eilat-Deep	
2019	5	27	2	5	29.9			2.1	3	31.4218	35.3541	Dead-Sea-Basin	
2019	5	27	3	11	11.1			2.4	3	29.6366	34.1094	Sinai	
2019	5	27	8	32	29.5			2.4	10	30.581	31.3781	Egypt	
2019	5	27	8	38	59.5			2.3	10	30.341	31.6804	Suez	
2019	5	27	9	49	29.3			2.7	30	33.7307	32.0696	E.Mediter.Sea	
2019	5	27	10	2	57.7			2.9	14	33.7861	32.1511	E.Mediter.Sea	
2019	5	27	16	29	27.8			1.6	20	33.9425	35.7448	Lebanon	
2019	5	28	2	25	49.1			2.5	30	33.6769	31.9772	E.Mediter.Sea	
2019	5	28	2	29	1.2			1.9	2	33.559	34.996	E.Mediter.Sea	
2019	5	28	5	27	50.8	4.6	4.6	4.5	30	36.5299	27.5207	E.Mediter.Sea	
2019	5	28	7	0	12.5			1.3	10	29.7973	35.024	Arava	
2019	5	28	10	4	52.6			1.5	17	33.0965	35.6118	Hula-Kinneret	
2019	5	28	20	11	56.7			2.2	4	33.7119	32.1716	E.Mediter.Sea	
2019	5	29	4	52	45.9			0.9	1	32.8396	35.5498	Hula-Kinneret	
2019	5	29	17	0	6.8	1.9		1.8	14	30.5521	35.2491	Arava	
2019	5	29	19	42	27.4			4.4	2	39.27	39.89	Turkey	
2019	5	30	0	55	5.9			2.9	1	26.8365	34.8236	Red-Sea	
2019	5	30	21	43	51.5			4.4	20	36.4495	27.7494	E.Mediter.Sea	
2019	5	31	0	9	54.8			2.1	40	33.84	34.3654	E.Mediter.Sea	
2019	5	31	0	12	39.9			1.8	3	33.894	34.373	E.Mediter.Sea	
2019	5	31	20	7	20.5			2.8	8	35.2189	28.5451	E.Mediter.Sea	
2019	5	31	22	31	34.8			1.9	10	33.6125	33.2054	E.Mediter.Sea	
2019	6	1	4	26	22.3			4.9	10	40.47	20.8		
2019	6	1	7	0	31			5	10	40.521	20.856		
2019	6	2	0	43	4.3			1.4	10	33.2738	35.8497	Yamune	
2019	6	2	10	36	12.3	2		2.2	12	30.0466	34.498	Sinai	
2019	6	2	13	50	47.7	2		2	14	30.5585	35.228	Barak-fault	
2019	6	2	14	55	24			1.4	4	30.0223	34.5599	Sinai	
2019	6	2	20	14	25.5	2.1		2.2	20	32.6311	34.2753	E.Mediter.Sea	
2019	6	2	23	8	7.9			3.8	25	35.737	27.128	E.Mediter.Sea	
2019	6	3	2	6	22.9			2.9	7	35.953	33.8317	E.Mediter.Sea	
2019	6	3	19	22	5.4			1.9	2	32.3666	35.3464	E.Shomron	
2019	6	3	22	54	18.7			1.3	6	32.8667	35.5712	Hula-Kinneret	
2019	6	4	7	17	30			2.3	30	32.2954	34.1145	E.Mediter.Sea	
2019	6	4	9	33	56.5	3.7		3.8	8	26.1507	33.0524	Egypt	
2019	6	4	23	13	58.4			2.4	18	34.6293	33.3862	E.Mediter.Sea	
2019	6	5	3	33	5.8			4.5	10	34.35	45.64		
2019	6	5	22	28	39.1			1.6	1	33.3231	34.649	Carmel-Tirza	
2019	6	6	2	39	45.3			3.5	5	35.5623	27.1334	E.Mediter.Sea	

2019	6	6	13	47	13			1.2	2	33.1845	35.7445	Hula-Kinneret	
2019	6	6	23	48	37.1			1.6	8	32.971	34.9536	Carmel-Tirza	
2019	6	7	2	0	10.3			0	1	33.2377	35.6917	Roum	
2019	6	7	7	50	17.5			1.6	8	29.8514	35.0514	Arava	
2019	6	7	8	14	6.8			3.3	83	36.9441	30.4484	Turkey	
2019	6	7	12	21	39.8			4.4	60	35.5502	28.3904	E.Mediter.Sea	
2019	6	7	13	37	11			0.6	12	29.8587	35.0153	Arava	
2019	6	8	23	12	33.2			3.3	8	34.1253	27.3729	E.Mediter.Sea	
2019	6	9	3	40	42.4			1.8	10	33.2516	35.6677	Roum	
2019	6	9	6	34	29.8			1.9	18	31.4109	35.477	Dead-Sea-Basin	
2019	6	9	20	14	53.3	2.1		2.2	12	33.8163	35.1178	E.Mediter.Sea	
2019	6	10	5	5	7.8			1.7	20	30.5889	35.3676	Arava	
2019	6	10	5	56	33.3			1.7	1	32.349	35.3642	E.Shomron	
2019	6	10	7	6	48.9	2.6		2.8	8	27.8428	33.4092	Suez	
2019	6	11	6	58	26.5	2.1		2.2	13	30.5789	35.3777	Arava	
2019	6	11	15	47	46.4			1.7	1	33.6744	36.3829	Palmira	
2019	6	11	17	47	26.7			2.2	1	33.8442	35.8817	Yamune	
2019	6	12	0	45	6.8			1.5	18	30.5748	35.3397	Arava	
2019	6	12	5	31	23.4	1.7		1.9	18	30.5834	35.3631	Arava	
2019	6	12	9	21	19.4			2.8	40	35.2121	30.9156	E.Mediter.Sea	
2019	6	12	17	20	38.9			1.7	18	30.5894	35.3841	Arava	
2019	6	12	20	39	38.5			1.3	6	33.5357	35.5043	Roum	
2019	6	13	2	44	57.2			1.8	18	30.5783	35.3482	Arava	
2019	6	14	2	57	15			1.6	1	33.7254	35.321	E.Mediter.Sea	
2019	6	14	8	57	16.1			2.2	1	33.7797	35.8113	Roum	
2019	6	14	15	27	45	2.3		2.5	1	33.6965	35.8762	Yamune	
2019	6	15	6	20	25.4			1.3	20	30.2002	35.1921	Arava	
2019	6	15	7	13	7.4			2.3	30	34.8782	34.1952	E.Mediter.Sea	
2019	6	15	10	6	51.6			1.9	7	32.8819	35.5848	Hula-Kinneret	
2019	6	15	18	41	46.8			3.6	20	35.3493	27.4421	E.Mediter.Sea	
2019	6	15	19	36	10.9			1.6	7	33.335	35.7712	Yamune	
2019	6	15	20	42	53.9			1.6	1	33.3185	35.4372	Lebanon	
2019	6	15	23	6	51	3		3	1	28.5252	34.7867	Arnona-Dakar-Deep	
2019	6	15	23	26	3.9			1.8	1	33.8857	36.0735	Yamune	
2019	6	16	1	22	0.1			1.2	6	33.1848	35.4688	Hula-Kinneret	
2019	6	16	3	29	0.9			1.8	18	30.5764	35.3598	Arava	
2019	6	17	15	47	58.4			1.4	7	29.8854	34.9911	Arava	
2019	6	17	16	17	23.8			1.8	1	33.689	36.4634	Palmira	
2019	6	18	15	30	30.5			1	9	32.7236	35.5003	Hula-Kinneret	
2019	6	19	18	36	3.8			2	1	33.732	35.8433	Yamune	
2019	6	19	22	32	51.1			1.4	4	32.8828	35.5427	Hula-Kinneret	

2019	6	19	23	32	14.7			0.7	3	33.2047	35.5945	Hula-Kinneret	
2019	6	20	2	57	20.4			1.6	20	30.5358	35.2883	Arava	
2019	6	20	7	13	29.9			3	1	27.1068	33.5858	Egypt	
2019	6	20	8	5	3.9			3.7	10	34.0733	26.1615	E.Mediter.Sea	
2019	6	20	9	57	32.2			1	2	32.3629	34.9279	Sharon	
2019	6	20	20	6	37.9			3.4	100	36.4711	24.8489	E.Mediter.Sea	
2019	6	21	8	17	7.8			1	11	30.3219	34.867	Paran-fault	
2019	6	21	8	45	56.1			2.1	8	34.7424	33.5012	E.Mediter.Sea	
2019	6	21	19	4	5			3.5	40	36.0011	30.8157	E.Mediter.Sea	
2019	6	22	0	4	59.9			1.5	18	33.2557	34.7646	Carmel-Tirza	
2019	6	22	1	24	21.7			2.7	40	35.9059	32.1368	E.Mediter.Sea	
2019	6	22	21	2	51.2			2.8	20	35.8613	30.817	E.Mediter.Sea	
2019	6	22	22	46	15.9			1.7	7	31.4203	35.3602	Dead-Sea-Basin	
2019	6	23	1	13	24.1			1.3	7	32.7722	35.248	Galilee	
2019	6	23	8	0	11.7			3	14	28.8225	30.6437	Egypt	
2019	6	23	10	19	21.8			3.5	150	36.4609	26.8733	E.Mediter.Sea	
2019	6	23	13	6	4.1			1.3	5	29.7536	35.0194	Arava	
2019	6	23	16	54	15.9			4.6	60	34.25	45.67		
2019	6	23	17	50	22.4			1.6	20	32.6041	35.173	Carmel-Tirza	
2019	6	23	20	7	36.4			1	20	32.8078	35.6346	Hula-Kinneret	
2019	6	24	0	26	8.2			3.5	1	35.3003	27.2794	E.Mediter.Sea	
2019	6	24	5	48	48.2			1.2	1	33.284	35.523	Lebanon	
2019	6	24	15	55	43.5	2.6		2.9	1	29.1415	32.7762	Suez	
2019	6	25	16	21	20.5	3.6		3.6	1	29.3215	32.6918	Suez	
2019	6	26	5	16	43.5			4.1	5	33.7884	25.7785	E.Mediter.Sea	
2019	6	26	7	9	49.2			3.6	1	27.3409	34.5233	Red-Sea	
2019	6	26	7	11	14	3.6		3.5	1	27.5803	34.2026	Red-Sea	
2019	6	26	8	53	42.1			3.8	5	31.175	35.4944	Dead-Sea-Basin	F
2019	6	26	8	57	18.9	2.5		2.6	12	31.1739	35.4834	Dead-Sea-Basin	
2019	6	26	9	1	54.1	3.3		3.1	5	31.168	35.4971	Dead-Sea-Basin	
2019	6	26	9	6	24.2			2.8	5	31.1598	35.4765	Dead-Sea-Basin	
2019	6	26	9	20	49.9			2	8	31.1636	35.4809	Dead-Sea-Basin	
2019	6	26	9	35	51.3			2.2	6	31.1634	35.4798	Dead-Sea-Basin	
2019	6	26	10	23	14.7			2	5	31.1691	35.472	Dead-Sea-Basin	
2019	6	26	10	37	0.9			2.1	3	31.161	35.4785	Dead-Sea-Basin	
2019	6	26	12	20	21			3.3	7	31.1684	35.4755	Dead-Sea-Basin	
2019	6	27	3	51	31.9			2.1	1	29.015	34.7882	Aragonese-Deep	
2019	6	27	8	21	18.8	2.8		2.9	1	29.1505	32.8259	Suez	
2019	6	28	8	53	59.6			1.9	16	32.1191	35.2688	Judea-Samaria	
2019	6	28	9	16	10.8			2.2	18	32.1299	35.2936	Judea-Samaria	
2019	6	28	19	19	8.1			2.1	2	28.9074	34.6344	Aragonese-Deep	

2019	6	28	21	32	2			2	16	34.773	33.8369	E.Mediter.Sea	
2019	6	29	5	43	17.7			3.1	1	31.9826	35.225	Judea-Samaria	F
2019	6	29	6	13	32.5			2.8	1	29.1443	32.6357	Suez	
2019	6	29	22	9	25.3			3	20	35.8615	28.5004	E.Mediter.Sea	
2019	6	30	0	21	11.6			1.8	18	32.1305	35.281	Judea-Samaria	
2019	6	30	1	8	19.4			2.9	20	35.8564	29.5607	E.Mediter.Sea	
2019	6	30	6	15	23.2			2.3	3	28.7894	33.2623	Suez	
2019	6	30	13	17	37.5			2.4	26	34.8429	33.931	E.Mediter.Sea	
2019	6	30	20	25	20.6			1.8	1	34.1367	34.9031	E.Mediter.Sea	
2019	7	1	18	47	58.8			1.5	7	30.0933	35.1895	Arava	
2019	7	1	19	20	14.2			1.6	17	32.5256	35.5236	Jordan-Valley	
2019	7	1	19	34	52.6			1.3	2	32.8827	35.5388	Hula-Kinneret	
2019	7	2	0	15	38.7			1.1	40	33.2273	35.6017	Roum	
2019	7	2	3	43	48.6			2.5	18	32.2016	35.5148	E.Shomron	
2019	7	2	6	42	43			2	16	32.196	35.5016	E.Shomron	
2019	7	2	20	54	51.9			2.5	1	30.0699	32.6694	Suez	
2019	7	3	1	2	11.9			4.5	30	35.3671	28.1698	E.Mediter.Sea	
2019	7	3	1	28	57.8			3.3	20	34.9259	27.9329	E.Mediter.Sea	
2019	7	3	15	43	57.9			0.9	8	32.7651	35.5644	Hula-Kinneret	
2019	7	3	15	46	44.6			0.8	1	32.9053	35.5612	Hula-Kinneret	
2019	7	4	4	1	37.3			4.1	10	34.9755	25.7591	E.Mediter.Sea	
2019	7	4	4	11	46.8			2.3	4	29.3203	34.8287	Eilat-Deep	
2019	7	4	6	27	35.3			4.7	10	35.925	54.383		
2019	7	4	15	38	5.7			2.4	1	27.9576	34.7878	Red-Sea	
2019	7	5	11	56	36.6			1.9	8	31.1801	35.4932	Dead-Sea-Basin	
2019	7	5	14	19	3.3			4.1	60	32.36	31.0635	E.Mediter.Sea	
2019	7	5	14	29	4.3			1.7	16	30.8962	35.2953	Arava	
2019	7	5	19	55	22.1			1.3	8	33.2294	35.457	Hula-Kinneret	
2019	7	6	19	43	5.7			2.9	17	35.3688	30.3715	E.Mediter.Sea	
2019	7	7	2	38	30.7			2.6	1	33.3432	35.8357	Yamune	
2019	7	8	7	0	30.2			5.7	10	31.83	49.55		
2019	7	9	4	48	47.4			4.1	10	31.84	49.42		
2019	7	9	13	29	26.1			1.7	25	29.6677	34.9422	Thamad	
2019	7	10	2	54	5.9			3.4	40	35.6705	28.8772	E.Mediter.Sea	
2019	7	10	10	20	32.7			1.4	20	30.6539	35.1803	Arava	
2019	7	10	10	57	3.2	4.4	4.5		10	36.87	43.41	Iraq	
2019	7	10	18	58	47.2			3.5	10	36.1317	29.3956	E.Mediter.Sea	
2019	7	10	22	25	40.4			2.5	1	34.0271	36.7766	Palmira	
2019	7	10	22	57	18.1			4.6	40	34.8932	24.8989	E.Mediter.Sea	
2019	7	11	12	10	18.9			3.7	20	34.2147	25.845	E.Mediter.Sea	
2019	7	11	14	7	49.1			2.5	40	36.1239	30.8068	E.Mediter.Sea	

2019	7	11	21	54	31.9			3.6	20	36.7415	28.9358	Turkey	
2019	7	11	22	56	13.1			2	1	33.8355	35.8331	Roum	
2019	7	12	1	29	51.9			1.6	16	29.7563	35.042	Arava	
2019	7	12	4	34	1.9			1.2	30	31.1812	35.4158	Dead-Sea-Basin	
2019	7	12	22	52	8.4			1.8	8	31.5273	35.7931	Northern-Jordan	
2019	7	13	0	33	33.9			1.4	14	30.4308	35.2642	Arava	
2019	7	13	8	43	45.4			1.8	25	29.6446	34.9497	Arava	
2019	7	13	15	8	47	4.6	4.7	4.8	20	37.1186	20.8565		
2019	7	13	16	52	57.9			2.5	10	34.7321	32.9108	Cyprus	
2019	7	13	20	46	52	3.3		3.2	3	27.1654	35.2535	Red-Sea	
2019	7	14	7	38	14.5			3.3	4	35.4951	31.8691	E.Mediter.Sea	
2019	7	14	13	12	35.7			4.4	60	34.4409	26.2252	E.Mediter.Sea	
2019	7	15	1	3	34.5			3.2	20	37.5755	35.5722	Turkey	
2019	7	16	12	17	58.8			2.9	2	35.1514	31.4706	E.Mediter.Sea	
2019	7	16	13	1	22.8			2.3	7	30.2889	32.753	Sinai	
2019	7	16	16	44	56.3			2	1	33.0497	35.5819	Hula-Kinneret	
2019	7	16	17	7	13.6			2	1	33.6702	36.3977	Palmira	
2019	7	17	15	20	18.4			4.5	10	34.36	45.62		
2019	7	17	15	49	11.8			1.7	7	33.7022	35.4523	Lebanon	
2019	7	17	22	46	45.5			4.2	15	30.97	48.73		
2019	7	18	9	22	4	1.7		1.8	14	30.1845	35.2261	Arava	
2019	7	18	17	1	9.4			2.2	1	33.7745	36.3771	Palmira	
2019	7	18	21	56	10.8			3	39	32.9692	32.3773	E.Mediter.Sea	
2019	7	18	22	17	17.6	1.7		1.8	12	30.0494	35.1406	Arava	
2019	7	18	22	48	11.8			1.4	14	30.0425	35.1378	Arava	
2019	7	19	1	33	46.6			3.7	20	35.7876	31.2419	E.Mediter.Sea	
2019	7	19	3	19	31.8			0.9	14	30.0607	35.1191	Arava	
2019	7	19	3	19	36.6			3	14	34.9256	32.4273	Cyprus	
2019	7	19	3	29	28.9			2.9	1	34.7989	32.3938	Cyprus	
2019	7	19	3	44	5.9			1.8	14	30.0414	35.1609	Arava	
2019	7	19	6	31	38.3			1.5	16	30.0413	35.153	Arava	
2019	7	19	11	13	22.3	5.1	5.1		13	36.6224	23.3673		
2019	7	19	15	1	21.7			3.2	1	36.2214	35.441	E.Mediter.Sea	
2019	7	19	16	46	47.9			3.8	1	39.1452	37.9637	Turkey	
2019	7	20	2	18	13.5			2.9	25	37.4127	30.0632	Turkey	
2019	7	20	2	58	37.3			3.2	12	37.3694	29.698	Turkey	
2019	7	20	5	43	8.1			2.9	16	37.322	29.8267	Turkey	
2019	7	20	6	21	2.3			2.9	7	37.3186	29.8878	Turkey	
2019	7	20	8	10	14.9			3.1	10	36.5636	26.6926	E.Mediter.Sea	
2019	7	20	8	33	33.1			3	10	37.3507	29.8677	Turkey	
2019	7	20	17	8	14.3			3.1	10	37.1376	29.8646	Turkey	

2019	7	21	1	57	17.8			3.4	7	37.2956	29.841	Turkey	
2019	7	21	3	2	27.1			3.1	14	37.3177	29.8744	Turkey	
2019	7	21	18	12	26.7			3	5	36.18	35.02	E.Mediter.Sea	
2019	7	21	20	34	43.3			1.8	1	29.0846	34.7213	Aragonese-Deep	
2019	7	21	23	20	16.9			1.6	2	33.5622	35.565	Roum	
2019	7	22	23	59	11.2			1.9	30	33.8132	33.8116	E.Mediter.Sea	
2019	7	23	0	43	33.6			1.7	20	33.0434	34.4889	E.Mediter.Sea	
2019	7	23	1	3	3.6			0.8	3	32.887	35.5333	Hula-Kinneret	
2019	7	24	3	34	58.4			2.1	3	32.7725	35.357	Galilee	
2019	7	24	3	55	44.3			3	18	34.5937	33.3469	E.Mediter.Sea	
2019	7	24	21	3	23.6			4.1	14	37.2936	35.5969	Turkey	
2019	7	25	10	55	31.2			2.1	20	29.6836	34.9396	Thamad	
2019	7	25	18	28	36.2			3.1	15	37.1322	28.9061	Turkey	
2019	7	27	22	51	47.9	3.3			30	34.2294	25.3935	E.Mediter.Sea	
2019	7	27	23	50	41.3			1.5	16	29.5877	34.9492	Arava	
2019	7	28	0	37	52	2.4		2.4	9	31.2378	35.5746	Dead-Sea-Basin	
2019	7	28	23	43	9.1			3.3	20	35.7191	30.7863	E.Mediter.Sea	
2019	7	29	23	12	5.1			2.7	4	34.7966	33.8421	E.Mediter.Sea	
2019	7	30	12	1	11.3			1.3	1	33.1112	35.3808	Lebanon	
2019	7	30	22	56	55.1			1.3	20	33.1305	35.6023	Hula-Kinneret	
2019	7	31	4	40	5.3			5.1	1	35.0757	25.8373	Crete	
2019	7	31	20	21	55.8			4.1	10	34.6	45.69		
2019	8	1	9	18	50.1			1.5	20	29.7959	35.0574	Arava	
2019	8	2	3	16	49			2.9	6	27.5175	34.4344	Red-Sea	
2019	8	2	16	33	34.4	2.3		2.4	7	32.8574	35.5871	Hula-Kinneret	
2019	8	2	23	31	43.7			3.6	10	34.4121	26.4133	E.Mediter.Sea	
2019	8	3	0	25	58.4			1.2	2	32.8662	35.5656	Hula-Kinneret	
2019	8	3	0	26	6.2			4.2	10	34.6	46.41		
2019	8	3	1	9	40.2			3.3	40	36.0065	31.7591	E.Mediter.Sea	
2019	8	3	2	56	14.2			1.7	20	31.7487	35.5176	Dead-Sea-Basin	
2019	8	3	6	0	17.4			1.9	16	33.3303	34.4856	E.Mediter.Sea	
2019	8	3	9	51	25	5	4.9	4.9	16	35.0605	27.8544	E.Mediter.Sea	
2019	8	3	10	30	10.4			3.5	1	35.1185	27.7795	E.Mediter.Sea	
2019	8	3	13	18	15.9			3.4	1	34.2484	26.0232	E.Mediter.Sea	
2019	8	3	18	14	59.1			3.8	10	34.919	27.9558	E.Mediter.Sea	
2019	8	3	18	50	3.5			3.4	10	34.9385	27.9454	E.Mediter.Sea	
2019	8	3	22	11	28.9			1.3	2	33.6405	35.2249	E.Mediter.Sea	
2019	8	4	1	57	56.1			2.5	20	34.7374	33.9026	E.Mediter.Sea	
2019	8	4	19	51	20.7			5.3	41	30.629	50.855		
2019	8	4	22	16	19.8			3.6	8	35.1516	27.8618	E.Mediter.Sea	
2019	8	5	16	46	45.6			1.6	8	31.0156	35.503	Dead-Sea-Basin	

2019	8	5	19	5	7.4			2.1	1	33.3846	35.4868	Lebanon
2019	8	6	23	43	11.1			1.4	8	32.8571	35.5821	Hula-Kinneret
2019	8	7	1	13	19.9			0.8	1	33.0824	35.6263	Hula-Kinneret
2019	8	7	21	8	8.4	2.2		2.3	12	32.8395	35.2211	Galilee
2019	8	8	8	39	13.2	4.8	4.8	4.8	30	37.5717	26.9237	
2019	8	8	11	19	36.3			4.2	4	37.8106	29.6876	Turkey
2019	8	8	11	25	31.1			5.9	5	37.7	29.719	Turkey
2019	8	8	12	38	21.9			3.7	0	37.7386	29.761	Turkey
2019	8	8	20	50	12.6			3.6	1	37.7646	29.8248	Turkey
2019	8	9	2	24	29.2			2.8	4	33.3239	35.4401	Lebanon
2019	8	9	2	38	50.1			1.9	4	33.3183	35.4444	Lebanon
2019	8	9	6	42	26.8			1.3	3	33.0711	35.5616	Hula-Kinneret
2019	8	9	21	28	8.4			2	12	31.3473	35.3626	Dead-Sea-Basin
2019	8	11	6	59	25.7			1.4	20	32.5715	35.5987	Jordan-Valley
2019	8	11	6	59	8.1			3.7	20	34.0286	25.711	E.Mediter.Sea
2019	8	11	7	2	55.9			4.9	10	34.214	25.7053	E.Mediter.Sea
2019	8	11	12	35	8.2			3.7	8	34.9283	28.0169	E.Mediter.Sea
2019	8	11	15	29	10.6			0.8	16	32.9647	35.2651	Galilee
2019	8	11	19	24	19.7			3.3	8	35.1196	27.9592	E.Mediter.Sea
2019	8	11	19	46	50.7			3.3	10	34.9393	28.0109	E.Mediter.Sea
2019	8	12	7	57	7.6			4.7	8	35.4299	26.151	E.Mediter.Sea
2019	8	12	13	34	27.2			4.2	5	38.31	40.93	Turkey
2019	8	12	21	29	50			2.1	6	33.3169	35.4435	Lebanon
2019	8	12	21	36	34.9			1.4	1	33.3203	35.4583	Lebanon
2019	8	12	23	38	55.9			3.9	60	34.8922	27.8851	E.Mediter.Sea
2019	8	13	0	10	17.6			1.7	6	33.3201	35.4438	Lebanon
2019	8	13	19	1	15.4			2.9	1	26.9693	35.0824	Red-Sea
2019	8	13	21	11	26			4.2	1	35.4451	24.2718	E.Mediter.Sea
2019	8	13	22	35	10.3			3.2	8	34.916	28.0607	E.Mediter.Sea
2019	8	14	11	29	26.7			4.1	10	37.7696	29.9133	Turkey
2019	8	15	17	18	54.4	1.9		2.3	25	32.8989	34.9834	Carmel-Tirza
2019	8	15	20	34	46.9			2.1	1	33.1757	37.1772	Syria2
2019	8	15	22	26	0.5			2.8	5	38.4973	30.6869	Turkey
2019	8	16	2	23	11.5			2.2	10	34.6399	33.3935	E.Mediter.Sea
2019	8	16	13	52	29.7			3.1	30	35.2511	30.4235	E.Mediter.Sea
2019	8	16	18	48	52.6			3.9	3	37.6171	29.973	Turkey
2019	8	17	0	58	25.5			3.5	10	36.5419	28.3818	E.Mediter.Sea
2019	8	17	16	25	43.2			3.8	2	34.9067	27.8994	E.Mediter.Sea
2019	8	20	4	37	9.1			3.9	5	37.7805	29.7908	Turkey
2019	8	20	9	34	54.3			4.5	40	36.0456	31.2118	E.Mediter.Sea
2019	8	21	8	10	45.3			2.8	1	30.0621	30.9005	Egypt

2019	8	21	21	15	19.5			1.2	5	33.3838	35.3115	Lebanon	
2019	8	21	23	44	52.4			1.3	7	32.7866	35.6336	Hula-Kinneret	
2019	8	21	23	58	36.7			1.9	4	33.5541	35.0304	E.Mediter.Sea	
2019	8	22	22	12	9.9			2	1	33.0503	35.5766	Hula-Kinneret	
2019	8	23	4	9	49.6			3.1	39	35.6069	25.9992	E.Mediter.Sea	
2019	8	24	5	30	6.3			2	7	32.9729	35.4056	Galilee	
2019	8	24	8	15	33.8	2.6		2.7	1	32.1359	35.2339	Judea-Samaria	
2019	8	24	18	15	56			1.6	10	33.2528	35.3572	Lebanon	
2019	8	24	21	0	46.2			2.1	1	30.7274	35.2494	Arava	
2019	8	25	5	49	32			2	12	33.0026	35.4108	Galilee	
2019	8	26	7	17	43.1			2.6	1	30.0325	31.892	Suez	
2019	8	26	9	13	26.7			2.4	1	33.6435	35.6722	Roum	
2019	8	26	15	38	17.6			3.3	20	35.9161	27.9548	E.Mediter.Sea	
2019	8	26	23	36	36			2.1	1	34.679	33.0757	Cyprus	
2019	8	27	1	58	14.6			3.2	30	35.548	28.5476	E.Mediter.Sea	
2019	8	27	2	5	53.6			2.4	18	34.7085	33.5011	E.Mediter.Sea	
2019	8	27	4	31	26.8			4.3	10	35.4618	28.0644	E.Mediter.Sea	
2019	8	28	0	6	31.1			3.6	10	35.74	27.28	E.Mediter.Sea	
2019	8	28	7	4	55			2.3	4	29.3024	32.3098	Suez	
2019	8	28	11	58	20.7	4.9	4.9	4.9	7	35.5788	27.9546	E.Mediter.Sea	
2019	8	28	12	28	36.9			3.1	68	36.19	28.39	E.Mediter.Sea	
2019	8	28	15	8	42.1			3.7	10	35.77	27.57	E.Mediter.Sea	
2019	8	28	15	31	39			3.6	10	35.78	27.57	E.Mediter.Sea	
2019	8	29	14	19	43.8			2.6	18	34.7944	34.0255	E.Mediter.Sea	
2019	8	29	22	15	10.2			3.8	1	36.1224	35.3152	E.Mediter.Sea	
2019	8	30	2	36	16.1			0.7	2	32.8574	35.5867	Hula-Kinneret	
2019	8	30	15	38	9.7			4.6	1	37.4176	26.8945		
2019	8	30	17	20	60			4.6	10	37.53	26.78		
2019	8	30	20	15	36.5			3.7	3	37.4916	26.8607		
2019	8	30	21	45	40.8			2.6	11	35.7	30.53	E.Mediter.Sea	
2019	8	31	20	27	35.3			2.9	30	37.2085	29.9499	Turkey	
2019	9	1	13	16	50.8			2.1	7	29.9323	34.3768	East-Sinai	
2019	9	1	22	4	2.7			1.5	16	32.8487	35.6372	Hula-Kinneret	
2019	9	2	6	13	22.1			3.6	20	36.1619	28.9302	E.Mediter.Sea	
2019	9	2	23	28	43.1			2.7	1	29.0634	34.1636	Sinai	
2019	9	3	0	14	36.1			2.9	40	35.9755	30.6927	E.Mediter.Sea	
2019	9	3	1	34	10.5			1.5	8	29.7588	34.5508	East-Sinai	
2019	9	3	1	34	54.6			1.3	3	33.3544	35.5495	Roum	
2019	9	3	3	30	10.2			4.2	40	34.3942	26.6456	E.Mediter.Sea	
2019	9	4	1	1	31.5			4.6	10	35.0898	27.9298	E.Mediter.Sea	
2019	9	4	1	10	26.4			3.8	16	35.0677	27.8749	E.Mediter.Sea	

2019	9	4	3	45	0.8	2.8		2.7	21	31.16	35.493	Dead-Sea-Basin	
2019	9	4	19	38	14.3			2.5	12	33.6224	34.9693	E.Mediter.Sea	
2019	9	5	2	59	57.9			3.9	8	35.1118	27.8649	E.Mediter.Sea	
2019	9	5	8	16	59.9			1.2	10	33.2533	35.6838	Roum	
2019	9	5	19	34	2.3			2.9	100	37.3113	30.4873	Turkey	
2019	9	6	0	15	10.1	2.4		2.6	18	32.5421	34.4806	E.Mediter.Sea	
2019	9	6	8	59	57.8	4.3	4.4	4.2	30	35.6294	31.8317	E.Mediter.Sea	
2019	9	6	17	53	46.2			3.1	16	35.0299	27.8303	E.Mediter.Sea	
2019	9	6	17	57	12.1			1.1	16	33.09	35.6351	Hula-Kinneret	
2019	9	7	2	1	31.4	3		2.9	10	29.2567	34.7948	Eilat-Deep	
2019	9	9	9	58	44.6			4.3	2	38.74	44.59		
2019	9	9	22	58	7.8			1.8	14	30.9551	35.7137	Northern-Jordan	
2019	9	10	0	12	8.4	3.3		0	1	33.3434	23.8757	E.Mediter.Sea	
2019	9	10	7	6	46.4			4.5	20	35.0757	27.882	E.Mediter.Sea	
2019	9	10	7	27	29.9			3.6	10	35.0463	27.787	E.Mediter.Sea	
2019	9	10	20	0	43.2			1.6	12	33.2575	35.5475	Roum	
2019	9	10	20	6	28.3			1.5	12	33.267	35.5348	Roum	
2019	9	12	3	55	31.7			1.9	6	33.3396	35.7861	Yamune	
2019	9	13	1	54	36.4			2.3	23	35.3687	32.0357	E.Mediter.Sea	
2019	9	13	3	16	42.1			1.7	3	33.0608	34.6082	Carmel-Tirza	
2019	9	13	12	31	25.7			4	100	35.7662	23.1032		
2019	9	13	21	16	9.6			2.1	9	30.9486	35.7751	Northern-Jordan	
2019	9	14	6	3	12.6			4.9	5	40.73	32.97	Turkey	
2019	9	14	16	27	0.8			2.1	1	33.1353	35.5239	Hula-Kinneret	
2019	9	14	21	14	52.8			3.2	10	36.2087	28.8846	E.Mediter.Sea	
2019	9	14	22	4	36			2.1	2	33.235	34.813	E.Mediter.Sea	
2019	9	15	2	7	2			3.8	60	34.7818	24.1704	E.Mediter.Sea	
2019	9	16	10	35	31.9	3.6		3.3	7	29.9751	34.403	East-Sinai	
2019	9	16	20	59	44.5			3.3	1	26.9279	34.894	Red-Sea	
2019	9	17	14	37	27.8			1.2	6	32.4528	35.6555	Jordan-Valley	
2019	9	17	19	29	58.9			4.6	10	34.95	46.36		
2019	9	17	21	16	29.8			2	2	31.9842	35.2225	Judea-Samaria	
2019	9	18	23	19	10.6			3.5	1	36.137	35.6116	E.Mediter.Sea	
2019	9	19	15	28	24.2			1.8	10	31.513	35.5171	Dead-Sea-Basin	
2019	9	19	18	13	16			1.6	2	32.127	35.0966	Judea-Samaria	
2019	9	19	23	51	39.5			1.3	13	31.657	35.424	Dead-Sea-Basin	
2019	9	19	23	53	1.6			0.9	18	31.6332	35.4976	Dead-Sea-Basin	
2019	9	21	0	17	30.1			1.7	14	33.6409	34.8331	E.Mediter.Sea	
2019	9	21	0	57	43.3			1.5	31	34.3679	34.0345	E.Mediter.Sea	
2019	9	21	0	59	22.5			1.2	1	33.4647	35.1279	E.Mediter.Sea	
2019	9	21	14	4	30.4			5.6	8	39.6021	19.1822		

2019	9	21	14	15	57			5.2	10	39.2284	18.8059		
2019	9	21	19	8	46.2	3.8	4	3.9	1	29.7294	30.7797	Egypt	
2019	9	21	19	59	0.3			1.5	2	30.2541	34.0354	Sinai	
2019	9	22	1	49	35.9			3.7	2	36.23	43.4	Iraq	
2019	9	22	3	57	27.4			1.8	17	29.8103	35.0646	Arava	
2019	9	23	1	41	12.3			1.2	18	33.1452	35.5862	Hula-Kinneret	
2019	9	23	7	9	2.5			4	14	35.7355	27.2976	E.Mediter.Sea	
2019	9	23	11	45	14.2			1.8	6	29.4241	34.8628	Eilat-Deep	
2019	9	23	12	32	34.9			2.6	10	34.356	32.5889	E.Mediter.Sea	
2019	9	24	0	48	32.8			1.1	5	32.9972	35.5406	Hula-Kinneret	
2019	9	24	6	50	39.5	2.4		2.5	2	28.8184	34.8112	Aragonese-Deep	
2019	9	24	7	48	59.4			5.2	20	34.0472	26.4418	E.Mediter.Sea	
2019	9	24	7	48	59.4			5.2	20	34.0472	26.4418	E.Mediter.Sea	
2019	9	24	9	1	59.6			4.7	32	31.869	49.671		
2019	9	24	22	55	0.8			3.5	8	35.75	28.21	E.Mediter.Sea	
2019	9	25	1	1	46			2.9	30	35.7912	29.8026	E.Mediter.Sea	
2019	9	25	1	3	54			0.8	16	33.1951	35.691	Hula-Kinneret	
2019	9	25	17	42	10.8			3.7	30	36.1253	28.9314	E.Mediter.Sea	
2019	9	26	4	9	35.2			2.3	20	34.7442	33.8894	E.Mediter.Sea	
2019	9	26	6	3	57.3			3.3	30	35.4874	32.4546	E.Mediter.Sea	
2019	9	26	10	59	23.1			5.8	2	40.88	28.2	Turkey	
2019	9	26	20	42	46.6	3.6		3.5	1	26.9648	33.866	Egypt	
2019	9	27	11	18	28.8			2.7	1	35.2366	31.8849	E.Mediter.Sea	
2019	9	28	10	26	24.6			0.9	7	33.3342	35.5843	Roum	
2019	9	28	15	22	49.3			0.8	10	31.3327	35.364	Dead-Sea-Basin	
2019	9	29	7	50	45.2			4.3	1	34.9966	27.5879	E.Mediter.Sea	
2019	9	30	10	30	31.1	3.2			100	35.696	26.5131	E.Mediter.Sea	
2019	10	1	9	28	10.9			1.7	1	33.4478	35.9064	Yamune	
2019	10	1	16	39	5.1			1.4	5	32.8616	35.5779	Hula-Kinneret	
2019	10	2	1	24	43.2			1.7	8	32.4218	35.2553	Carmel-Tirza	
2019	10	2	6	16	57.4			1.5	6	32.8369	35.5946	Hula-Kinneret	
2019	10	2	17	7	22.2			1.5	7	33.605	35.5387	Roum	
2019	10	2	17	55	51.5			2.1	1	34.8396	33.6293	Cyprus	
2019	10	2	18	53	54.2			1.4	6	32.834	35.592	Hula-Kinneret	
2019	10	3	4	44	56.8			5.1	20	36.1094	28.5836	E.Mediter.Sea	
2019	10	3	19	18	43.8	2.1		2.1	10	33.1274	35.1053	E.Mediter.Sea	
2019	10	4	3	31	18.4			1.6	6	32.8297	35.594	Hula-Kinneret	
2019	10	4	14	10	51.4			1.5	14	32.439	35.3967	E.Shomron	
2019	10	4	20	20	18.2			4.1	10	35.8034	27.4845	E.Mediter.Sea	
2019	10	4	22	43	9.7			1.5	2	32.0919	35.3273	E.Shomron	
2019	10	5	8	47	55.1			1.8	12	32.844	35.2114	Galilee	

2019	10	5	14	10	27.7	2		2.1	2	33.3174	35.5828	Roum	
2019	10	5	14	51	33.5			4.4	80	35.94	28.04	E.Mediter.Sea	
2019	10	6	3	33	20.3			2	12	31.6485	35.5744	Dead-Sea-Basin	
2019	10	6	5	14	59.7	2.1		2.2	15	33.0311	35.6154	Hula-Kinneret	
2019	10	6	5	57	10.7			3.6	122	36.4	26.55	E.Mediter.Sea	
2019	10	6	8	1	41.8			1.2	5	32.8313	35.5598	Hula-Kinneret	
2019	10	6	21	18	25.8			1.7	14	32.7165	35.244	Carmel-Tirza	
2019	10	7	1	18	32			3.6	13	36.03	27.29	E.Mediter.Sea	
2019	10	7	8	21	31.2			2.7	4	29.1562	32.7289	Suez	
2019	10	7	18	46	15.7	2.7		2.8	7	31.1627	35.4791	Dead-Sea-Basin	
2019	10	7	22	2	18.7			3.4	12	35.17	26.31	E.Mediter.Sea	
2019	10	8	14	55	38.3			3.1	10	34.95	33.93	Cyprus	
2019	10	8	18	16	10.6			1.4	8	33.1825	35.6884	Hula-Kinneret	
2019	10	9	14	39	17.9			2.9	5	35.6276	30.0971	E.Mediter.Sea	
2019	10	9	14	59	16.5			1.9	3	33.424	35.2218	E.Mediter.Sea	
2019	10	9	16	22	31.3			3.9	3	37.5654	29.5348	Turkey	
2019	10	9	19	48	28.5			2.6	1	27.7619	34.2519	Arnona-Dakar-Deep	
2019	10	10	0	18	29.2			2.1	30	33.0589	34.3453	E.Mediter.Sea	
2019	10	10	17	34	31.2			1.7	1	33.604	35.6094	Roum	
2019	10	10	18	53	36			0.7	8	33.0507	35.5441	Hula-Kinneret	
2019	10	10	21	43	29.4			1.6	10	31.5025	35.5451	Dead-Sea-Basin	
2019	10	10	23	30	37.6			1.6	12	32.4271	35.6057	Jordan-Valley	
2019	10	11	1	11	0.5			3	1	29.7409	30.9649	Egypt	
2019	10	11	14	18	53.3			3.7	8	34.3157	24.1487	E.Mediter.Sea	
2019	10	11	14	46	32.9			2	11	31.5093	35.5453	Dead-Sea-Basin	
2019	10	11	22	59	27.2			3.1	25	37.0356	27.9651		
2019	10	12	7	45	16.2			3.5	20	35.24	29.0218	E.Mediter.Sea	
2019	10	12	17	21	23.6			4.9	10	32.33	49.72		
2019	10	12	22	11	52.7			3.5	5	34.8083	27.9514	E.Mediter.Sea	
2019	10	13	13	43	18			2.6	6	29.1379	31.299	Egypt	
2019	10	13	19	1	30.1			2.7	10	35.2399	27.3939	E.Mediter.Sea	
2019	10	13	19	39	21.7			1.7	1	33.6044	35.4938	Roum	
2019	10	14	0	53	40.7			1.6	20	33.3864	34.5405	E.Mediter.Sea	
2019	10	14	12	56	30.6	2.8		2.9	9	31.4983	35.553	Dead-Sea-Basin	
2019	10	14	13	19	16			2.2	3	31.4984	35.5446	Dead-Sea-Basin	
2019	10	14	15	55	43.6			3	13	31.5098	35.5137	Dead-Sea-Basin	
2019	10	14	16	0	55.7			2.1	9	31.5013	35.5319	Dead-Sea-Basin	
2019	10	14	17	54	59.5			2.2	9	31.5033	35.5406	Dead-Sea-Basin	
2019	10	14	19	30	10.3			1.1	4	30.3905	35.2897	Arava	
2019	10	15	1	3	2.7			2	5	34.4996	37.1979	Palmira	
2019	10	15	1	5	20.9			0.6	11	32.3531	35.5396	E.Shomron	

2019	10	15	9	6	35.8			2.5	30	35.72	32.34	E.Mediter.Sea	
2019	10	15	19	8	10.1			1.6	2	33.7141	35.8676	Yamune	
2019	10	15	19	15	58.4			1.6	13	32.9939	35.6029	Hula-Kinneret	
2019	10	16	3	29	33			1.1	16	31.4371	35.3131	Judea-Samaria	
2019	10	16	7	27	59.4			3.5	105	37.33	30.75	Turkey	
2019	10	17	13	9	43.2			1.9	1	33.2587	34.8666	E.Mediter.Sea	
2019	10	17	21	28	49.1			1.2	2	32.8014	35.5608	Hula-Kinneret	
2019	10	18	4	18	43.7			2.4	0	33.9585	35.8628	Lebanon	
2019	10	18	10	46	7	3.5		3.5	15	34.51	33.22	E.Mediter.Sea	
2019	10	18	14	12	23.2			1.3	10	33.026	35.6205	Hula-Kinneret	
2019	10	18	18	31	43.8			1.4	14	33.1233	35.6206	Hula-Kinneret	
2019	10	20	4	32	34.6			2.6	1	27.3128	34.5731	Red-Sea	
2019	10	21	0	42	31.2			3.4	1	33.9579	25.6425	E.Mediter.Sea	
2019	10	21	1	6	0.2			1.1	19	32.3604	35.4139	E.Shomron	
2019	10	21	3	10	19.8			1.3	1	33.57	35.7698	Roum	
2019	10	21	3	14	27.9			1.3	1	33.5813	35.8069	Yamune	
2019	10	21	10	30	47.8			3.5	30	35.0147	29.7738	E.Mediter.Sea	
2019	10	21	17	40	49.8			2.4	1	33.8812	35.9291	Yamune	
2019	10	21	22	23	13.3			2.9	40	36.1597	29.327	Turkey	
2019	10	21	23	54	34.4			2	1	34.188	36.3238	Palmira	
2019	10	22	6	10	50.2			1.8	6	30.3024	35.2451	Arava	
2019	10	22	21	6	37.9			2.2	1	34.2773	36.4906	Palmira	
2019	10	23	20	57	29.1			1.9	6	33.3119	35.4105	Lebanon	
2019	10	23	21	18	2.9			1.5	10	33.2474	35.7877	Yamune	
2019	10	24	1	16	21			1.3	1	31.4048	35.4286	Dead-Sea-Basin	
2019	10	24	21	6	46.8			4.7	10	36.2022	28.7191	E.Mediter.Sea	
2019	10	25	3	54	52.1			3.2	16	36.1859	28.6685	E.Mediter.Sea	
2019	10	25	4	31	37.1			4.6	10	39.706	15.52		
2019	10	26	3	25	41.7			1.4	9	33.0084	36.816	W.Sirhan	
2019	10	27	2	0	3.1			3.5	10	36.0996	28.887	E.Mediter.Sea	
2019	10	27	3	14	36.6			2.9	7	35.1817	38.6646	Syria2	
2019	10	27	3	29	16.1			1.5	5	33.076	35.9542	W.Sirhan	
2019	10	27	3	40	27			2.8	30	34.8432	27.9556	E.Mediter.Sea	
2019	10	27	8	33	32.8			1.5	20	33.0856	35.6166	Hula-Kinneret	
2019	10	28	0	46	44.7			1.3	8	33.3348	35.6009	Roum	
2019	10	28	12	36	2.1			1.9	11	29.8126	34.5165	East-Sinai	
2019	10	29	0	0	55.9			0.9	1	33.2765	35.6129	Roum	
2019	10	29	13	1	55.2			4	40	35.5625	25.827	E.Mediter.Sea	
2019	10	30	0	56	11.6			1.6	9	32.409	35.5938	Jordan-Valley	
2019	10	30	1	42	19.7			2.6	10	35.3846	31.8094	E.Mediter.Sea	
2019	10	30	13	48	35.8			1.7	4	33.5274	35.4132	Lebanon	

2019	10	31	0	26	11			1.4	20	32.3954	35.5188	E.Shomron	
2019	10	31	2	32	51.3			2	18	33.2128	34.5914	Carmel-Tirza	
2019	10	31	11	34	57.7			1.7	9	33.129	35.6072	Hula-Kinneret	
2019	10	31	15	43	59.6			5	10	26.143	54.749		
2019	10	31	21	5	20.5			1.7	13	33.1112	34.4763	Carmel-Tirza	
2019	10	31	21	58	34.6			0.9	7	32.9881	35.547	Hula-Kinneret	
2019	11	1	0	55	11.1			1.4	4	32.8802	35.5813	Hula-Kinneret	
2019	11	1	5	25	44.3			4.7	10	40.533	20.83		
2019	11	1	8	22	3.4			4.5	10	32.7	48.24		
2019	11	1	10	17	7.4			3.9	91	36.2131	31.5331	E.Mediter.Sea	
2019	11	1	18	40	41.3	3.1		3.1	5	32.8877	35.5758	Hula-Kinneret	
2019	11	2	2	6	21.9			0.4	9	33.1366	35.5954	Hula-Kinneret	
2019	11	2	4	13	52.4			1.6	4	32.8705	35.5875	Hula-Kinneret	
2019	11	2	5	47	38			1.6	1	33.5908	35.8491	Yamune	
2019	11	2	14	7	10.3			1.7	6	32.8721	35.5917	Hula-Kinneret	
2019	11	2	16	22	3.6			1.4	1	32.0212	35.2997	Judea-Samaria	
2019	11	2	17	49	10.3			1.8	25	29.6468	34.9721	Arava	
2019	11	2	20	36	15.1			1.7	4	32.1676	35.3946	E.Shomron	
2019	11	2	21	36	37.7	2.1		2.4	17	29.6645	35.0837	Arava	
2019	11	2	22	41	55.2			1.7	20	29.66	34.9755	Arava	
2019	11	3	0	46	14.1			3.6	20	34.2296	25.7559	E.Mediter.Sea	
2019	11	3	4	18	36			3.7	20	36.1766	28.7682	E.Mediter.Sea	
2019	11	3	16	13	8.8			3.3	20	36.1117	28.7098	E.Mediter.Sea	
2019	11	3	17	17	32.9			1.8	16	31.5051	35.4763	Dead-Sea-Basin	
2019	11	4	8	55	46.2			1.5	1	32.8885	35.5887	Hula-Kinneret	
2019	11	4	14	53	23.2			1.3	4	33.5155	35.9315	Yamune	
2019	11	4	19	20	32.7			2	10	33.3982	34.6395	Carmel-Tirza	
2019	11	4	23	0	3.7			2.3	1	35.6342	35.5774	E.Mediter.Sea	
2019	11	4	23	1	6.9			2	15	31.5045	35.4774	Dead-Sea-Basin	
2019	11	4	23	5	48.8			1.2	13	32.4072	35.597	Jordan-Valley	
2019	11	4	23	7	23			2	16	31.5056	35.4801	Dead-Sea-Basin	
2019	11	4	23	9	10.4			1.8	16	31.5005	35.4706	Dead-Sea-Basin	
2019	11	4	23	13	4.8			1.7	16	31.499	35.4856	Dead-Sea-Basin	
2019	11	5	1	28	45.3			1.7	15	30.4359	35.2118	Arava	
2019	11	5	3	29	37.6			2.1	9	33.4377	34.607	E.Mediter.Sea	
2019	11	5	3	50	23.6			3.7	5	36.8808	28.5442	Turkey	
2019	11	5	11	0	31			1.6	1	31.8058	35.4573	Dead-Sea-Basin	
2019	11	5	21	1	21.6			3.2	5	35.3379	31.5904	E.Mediter.Sea	
2019	11	5	22	32	30.5			1.4	25	29.6578	34.9503	Thamad	
2019	11	6	16	28	53.6			4.6	10	27.303	54.909		
2019	11	6	18	0	27.7			2.7	20	34.3365	33.6348	E.Mediter.Sea	

2019	11	7	2	34	5.8			2.5	5	36.7488	31.5121	Turkey	
2019	11	7	15	29	2.2			2.2	2	32.8832	35.5715	Hula-Kinneret	
2019	11	7	22	47	4.6			5.9	10	37.807	47.558		
2019	11	7	23	5	18.3			1.7	14	33.545	34.6813	E.Mediter.Sea	
2019	11	8	21	11	22.9			0.8	10	32.4178	35.6178	Jordan-Valley	
2019	11	9	7	4	11.6			1.6	13	32.4072	35.5756	Jordan-Valley	
2019	11	9	7	19	45.6			3.4	10	36.0803	35.8157	E.Mediter.Sea	
2019	11	10	2	13	43.6			4.8	10	37.812	47.51		
2019	11	10	5	18	26.2			1.2	1	29.2984	34.7536	Eilat-Deep	
2019	11	10	5	45	5.9			2.3	5	29.2261	34.7073	Eilat-Deep	
2019	11	10	14	43	3			2.8	3	35.7704	29.5762	E.Mediter.Sea	
2019	11	10	20	15	33.6			1.3	4	32.8665	35.5643	Hula-Kinneret	
2019	11	11	1	3	18.9			2.8	10	29.1876	34.752	Eilat-Deep	
2019	11	12	0	31	4			3.2	8	36.2351	28.755	E.Mediter.Sea	
2019	11	12	22	15	2.6			1.8	6	29.2212	34.7361	Eilat-Deep	
2019	11	12	23	25	47.9			1.5	13	32.4156	35.606	Jordan-Valley	
2019	11	13	3	25	19.1			1.4	8	33.5614	36.0014	Yamune	
2019	11	13	3	32	10.1			1.3	1	33.4567	35.8739	Yamune	
2019	11	13	8	25	35.8			2.3	12	29.1998	34.7007	Eilat-Deep	
2019	11	13	16	44	22.5			1.6	21	32.6717	35.2117	Carmel-Tirza	
2019	11	13	18	58	3.3			1.7	10	29.2221	34.6803	Eilat-Deep	
2019	11	13	19	41	45.9			1.6	8	32.827	35.6077	Hula-Kinneret	
2019	11	14	16	20	22.2			1.1	1	32.3657	35.4338	E.Shomron	
2019	11	14	23	11	31.9			1.6	8	33.3667	35.6506	Roum	
2019	11	15	7	47	49.5			1.7	17	32.3419	35.6095	Jordan-Valley	
2019	11	15	18	15	12.1			4.1	12	37.23	23.93		
2019	11	15	19	26	24.3			1.4	10	29.2687	34.7468	Eilat-Deep	
2019	11	15	20	35	12.3			0.5	2	33.0698	35.4017	Galilee	
2019	11	16	18	14	14.2			4	40	36.2996	30.1752	Turkey	
2019	11	16	19	14	13.7	2.8		2.8	9	33.7301	34.6998	E.Mediter.Sea	
2019	11	16	21	11	8.2			1.4	14	32.4978	35.2848	Carmel-Tirza	
2019	11	17	4	24	9.5			3.3	30	35.1072	26.2104	Crete	
2019	11	17	7	44	36.5			1.7	5	31.1954	35.385	Dead-Sea-Basin	
2019	11	17	17	14	28.4	4.3	4.4		1	36.312	23.4374		
2019	11	17	19	56	52.6			0.6	8	33.1851	35.5544	Hula-Kinneret	
2019	11	17	21	11	28.2			2.1	38	34.6497	32.6886	Cyprus	
2019	11	17	21	26	33.5			1.9	2	33.2196	35.7015	Yamune	
2019	11	18	7	21	12.5			1.7	20	32.6283	35.1508	Carmel-Tirza	
2019	11	18	12	39	43.7			1.2	13	33.1133	35.743	Hula-Kinneret	
2019	11	19	0	14	14.9			4.7	10	38.544	44.402		
2019	11	19	7	24	8.5			1.9	13	31.4426	35.331	Judea-Samaria	

2019	11	19	14	45	56.9			1.5	3	30.6258	35.3712	Arava	
2019	11	19	23	4	25.8			3.9	1	27.4839	34.5459	Red-Sea	
2019	11	20	14	0	27.6			3.4	100	36.29	26.63	E.Mediter.Sea	
2019	11	20	14	23	34.6			2.2	8	28.9615	32.2624	Egypt	
2019	11	21	3	25	12.1			3.3	40	36.0123	27.1055	E.Mediter.Sea	
2019	11	21	3	26	53.8			1.6	9	33.2325	35.2907	Lebanon	
2019	11	21	3	31	36.8	2		2.1	10	30.6863	35.3033	Arava	
2019	11	21	10	13	14.6			2.7	8	28.2034	34.6369	Arnona-Dakar-Deep	
2019	11	21	22	12	46.6			1.7	15	32.1261	35.3703	E.Shomron	
2019	11	22	3	47	2.7	1.9		2.1	16	32.1316	35.3465	E.Shomron	
2019	11	22	7	38	45.8			1.6	2	33.3386	35.3827	Lebanon	
2019	11	22	9	4	4.2			4.1	10	34.2229	20.4705		
2019	11	22	22	50	30.8			3.9	10	34.5863	25.6182	E.Mediter.Sea	
2019	11	23	11	1	48.8			4.5	30	31.28	49.88		
2019	11	23	15	44	51.2			2.2	5	32.8642	35.5746	Hula-Kinneret	
2019	11	23	15	55	56.7			1.5	5	32.8687	35.5811	Hula-Kinneret	
2019	11	23	19	21	18.7			0.9	1	32.8691	35.5888	Hula-Kinneret	
2019	11	24	4	42	1.2	3.1		2.9	4	28.7712	34.4528	Sinai	
2019	11	24	10	57	51			3	20	35.6927	30.2489	E.Mediter.Sea	
2019	11	25	1	12	38.7			3.2	30	34.3004	27.0499	E.Mediter.Sea	
2019	11	25	2	18	39.4			1.6	12	31.3484	35.5345	Dead-Sea-Basin	
2019	11	25	2	19	41.7			1.5	13	31.3384	35.5439	Dead-Sea-Basin	
2019	11	25	2	20	28.2			1.3	14	31.3367	35.5303	Dead-Sea-Basin	
2019	11	25	3	57	22.8			1.2	1	32.8561	35.5671	Hula-Kinneret	
2019	11	25	8	1	41.3			1.9	12	31.3466	35.5314	Dead-Sea-Basin	
2019	11	25	8	2	59.3	2.4		2.5	12	31.3574	35.5398	Dead-Sea-Basin	
2019	11	25	8	7	44	3.2		3.1	11	31.3529	35.5318	Dead-Sea-Basin	
2019	11	25	11	39	31.5	3.7		3.5	12	31.3502	35.5328	Dead-Sea-Basin	
2019	11	25	11	48	46.9			3.5	15	31.3556	35.5419	Dead-Sea-Basin	
2019	11	25	12	32	32.2			2.2	11	31.3457	35.5213	Dead-Sea-Basin	
2019	11	25	12	51	47.4			1.1	18	30.2087	35.1894	Arava	
2019	11	25	13	16	18.6			2.3	11	30.6894	35.3166	Arava	
2019	11	25	17	9	19.8			2.1	13	30.6804	35.3026	Arava	
2019	11	25	18	2	47			1.6	12	31.3399	35.5088	Dead-Sea-Basin	
2019	11	25	21	14	20.3			2.2	1	34.1002	35.6943	Lebanon	
2019	11	26	2	54	8.7			6.4	20	41.52	19.559		
2019	11	26	3	51	12.1			1.9	7	31.0743	35.4916	Dead-Sea-Basin	
2019	11	26	3	53	16.9			1.5	12	31.0716	35.4711	Dead-Sea-Basin	
2019	11	26	5	56	10.5			4.2	10	41.49	19.46		
2019	11	26	6	8	19.1			5.4	10	41.579	19.425		
2019	11	26	11	28	19.5			1.8	14	31.3466	35.5307	Dead-Sea-Basin	

2019	11	26	17	19	8.1			4.7	5	41.51	19.36		
2019	11	26	20	3	25			4.5	10	37.8163	29.6438	Turkey	
2019	11	27	2	30	40.4			1.7	6	30.5208	33.9137	Sinai	
2019	11	27	5	52	11.1			2	10	33.7656	36.3481	Palmira	
2019	11	27	7	23	40.3			6	60	35.2754	23.5493		
2019	11	27	9	13	19.3			2.9	0	30.3257	31.8884	Suez	
2019	11	27	10	44	0.2			2.2	6	31.0653	35.4742	Dead-Sea-Basin	
2019	11	27	14	45	22.1			5.3	13	41.538	19.466		
2019	11	28	2	59	37.8			1.5	1	33.5913	35.7616	Roum	
2019	11	28	21	42	55.5			1	1	33.1081	35.4784	Hula-Kinneret	
2019	11	28	23	0	40.9			4.5	10	41.41	19.58		
2019	11	29	3	16	18.4			1.5	10	29.8905	35.0408	Arava	
2019	11	29	6	51	12.9			3.3	40	34.8462	26.1766	E.Mediter.Sea	
2019	11	29	7	32	37.4			1.7	11	31.3412	35.5423	Dead-Sea-Basin	
2019	11	29	9	52	26.8			3.6	23	35.63	23.31		
2019	11	29	17	16	6.5			2.1	8	36.4075	34.6162	E.Mediter.Sea	
2019	11	29	17	20	13.2			5	10	31.92	49.814		
2019	11	29	20	46	36.4			4.5	80	39.06	22.31		
2019	11	30	0	17	37.8			1.7	19	32.1851	34.7967	Sharon	
2019	11	30	2	0	3.5			2.1	40	33.8695	31.7793	E.Mediter.Sea	
2019	11	30	2	35	51.7			1.7	18	31.3224	35.4697	Dead-Sea-Basin	
2019	11	30	3	24	53.4			1.4	2	33.6225	35.8154	Yamune	
2019	11	30	3	24	38.9			3.2	60	34.4547	26.4071	E.Mediter.Sea	
2019	11	30	16	29	43.5	2.6		2.7	16	29.3513	34.9285	Eilat-Deep	
2019	11	30	23	51	18.6			1.7	4	31.6498	35.4755	Dead-Sea-Basin	
2019	12	1	13	20	14.9			2	5	32.8841	35.564	Hula-Kinneret	
2019	12	1	18	52	14.4			3.2	20	35.0436	26.3823	E.Mediter.Sea	
2019	12	1	18	56	1.6			1.2	7	32.8735	35.5891	Hula-Kinneret	
2019	12	1	19	0	30			3	20	35.1875	28.8476	E.Mediter.Sea	
2019	12	2	7	31	3.2			3	8	30.4025	31.8154	Suez	
2019	12	2	19	12	10.4			2.8	10	35.9425	35.5054	E.Mediter.Sea	
2019	12	3	2	6	42.9			1.1	5	32.792	35.5359	Hula-Kinneret	
2019	12	3	2	34	43.6			1.6	1	32.83	35.5798	Hula-Kinneret	
2019	12	3	17	55	4.9			3.7	12	37.7797	29.6702	Turkey	
2019	12	4	2	20	28.7			3.4	14	34.4937	24.8429	E.Mediter.Sea	
2019	12	4	2	25	54.4			3.6	40	34.6985	24.7403	E.Mediter.Sea	
2019	12	4	2	53	47.7			1.5	1	33.5227	35.8017	Yamune	
2019	12	4	10	45	0			2.9	20	34.3598	32.1724	E.Mediter.Sea	
2019	12	5	6	56	15			2.6	18	34.7068	33.4471	E.Mediter.Sea	
2019	12	5	11	3	12.8			2.2	16	31.9167	35.4942	E.Shomron	
2019	12	5	15	31	9.4			2.4	18	34.6883	33.4567	E.Mediter.Sea	

2019	12	5	15	47	46.9			1.6	15	33.1725	35.5984	Hula-Kinneret	
2019	12	5	16	14	56.6			3	18	34.6928	33.4575	E.Mediter.Sea	
2019	12	5	17	57	44			3.1	30	35.0133	26.4757	E.Mediter.Sea	
2019	12	5	20	28	50			2.5	18	34.6963	33.4668	E.Mediter.Sea	
2019	12	5	23	24	55.6			2.4	1	34.195	36.4308	Palmira	
2019	12	6	8	45	36.3			4.5	10	35.0456	23.8127	E.Mediter.Sea	
2019	12	6	9	39	45.9			1.1	6	33.2402	35.6991	Yamune	
2019	12	6	18	54	48			1.4	12	32.8751	35.7237	Hula-Kinneret	
2019	12	6	23	19	25.9			2.3	1	27.833	34.3651	Arnona-Dakar-Deep	
2019	12	7	3	2	10.1			0.4	3	33.2141	35.6171	Hula-Kinneret	
2019	12	7	3	14	33.2			1.5	1	33.5612	35.7788	Roum	
2019	12	7	4	7	36.5			1.4	1	33.5888	35.7828	Roum	
2019	12	7	14	35	2.7			4.1	20	34.9848	24.3722	E.Mediter.Sea	
2019	12	7	14	47	1.7			4.5	20	34.93	24.2363	E.Mediter.Sea	
2019	12	8	3	41	51.1			4.3	10	35.03	23.79	E.Mediter.Sea	
2019	12	8	9	50	53.6			1.6	18	29.5434	34.8447	Arava	
2019	12	8	21	9	7.9			3.2	40	35.58	31.05	E.Mediter.Sea	
2019	12	8	21	47	24	2		2	4	32.0554	35.2951	Judea-Samaria	
2019	12	8	22	41	20.8			4.6	30	34.9748	24.4287	E.Mediter.Sea	
2019	12	9	2	27	57.3			3.2	7	35.8952	23.49		
2019	12	9	10	41	34.8			3.5	91	36.59	26.81	E.Mediter.Sea	
2019	12	9	13	2	0.6			2.9	15	29.7169	29.6616	Egypt	
2019	12	9	17	11	1			1.8	28	32.5837	34.1769	E.Mediter.Sea	
2019	12	9	23	5	37.3			1.5	4	32.7613	35.5772	Hula-Kinneret	
2019	12	9	23	55	7.3	1.8		1.8	4	32.0453	35.3856	E.Shomron	
2019	12	10	0	55	34.6			3.4	40	35.0885	28.8715	E.Mediter.Sea	
2019	12	10	1	29	14.6			1.3	1	32.0359	35.3796	E.Shomron	
2019	12	10	4	23	51.8			1.7	1	33.6169	35.7861	Roum	
2019	12	10	4	24	48.2	2.2		2.1	14	32.4688	35.3534	E.Shomron	
2019	12	10	4	27	10.7			1.2	3	33.6285	35.6703	Roum	
2019	12	10	18	7	8.5			1.5	5	32.7506	35.5827	Hula-Kinneret	
2019	12	10	18	24	47.6			3.1	40	34.1271	26.568	E.Mediter.Sea	
2019	12	10	20	14	10.6			4.6	40	38.9193	27.8664	Turkey	
2019	12	10	20	24	9.4			4.7	8	39.0702	28.0016	Turkey	
2019	12	10	21	58	27.2			5.3	60	34.9849	26.6885	E.Mediter.Sea	
2019	12	10	22	8	28.2			3.2	20	34.8885	27.0323	E.Mediter.Sea	
2019	12	11	2	29	29.8			4.8	142	36.8661	24.2958	E.Mediter.Sea	
2019	12	12	0	56	33.5			3.7	20	35.1504	27.6939	E.Mediter.Sea	
2019	12	12	2	49	26.6			4	20	34.2716	24.6514	E.Mediter.Sea	
2019	12	12	3	5	41.4			5	10	34.772	26.5783	E.Mediter.Sea	
2019	12	12	9	52	56.3			4.2	10	34.733	26.4359	E.Mediter.Sea	

2019	12	12	19	39	0.4			2	1	33.86	36.0746	Yamune	
2019	12	16	2	33	51.1	2.6		2.6	1	30.9119	35.4832	Dead-Sea-Basin	
2019	12	16	3	2	52.4			1.3	1	33.5175	35.9269	Yamune	
2019	12	16	3	23	19.6			1.4	6	30.9391	35.4693	Dead-Sea-Basin	
2019	12	16	11	29	19			2.4	30	34.6863	34.2536	E.Mediter.Sea	
2019	12	17	19	25	19.8			1.3	18	32.0891	35.4196	E.Shomron	
2019	12	17	21	30	57.1			1.8	5	31.1664	35.4332	Dead-Sea-Basin	
2019	12	18	2	14	25.7			1.5	16	31.5118	35.4527	Dead-Sea-Basin	
2019	12	18	3	59	30.8			1.9	16	31.5019	35.4719	Dead-Sea-Basin	
2019	12	18	4	1	24.3			1.5	18	31.4739	35.5092	Dead-Sea-Basin	
2019	12	18	6	50	32.7			2	14	31.4964	35.4312	Dead-Sea-Basin	
2019	12	18	13	45	26.7			1.8	10	31.3562	35.3559	Dead-Sea-Basin	
2019	12	18	16	45	29.4			1.3	20	31.348	35.3436	Dead-Sea-Basin	
2019	12	18	20	34	33.5			1	1	32.8796	35.6024	Hula-Kinneret	
2019	12	18	21	10	34			1.5	16	32.3271	35.4515	E.Shomron	
2019	12	19	0	42	54.5			1.2	1	33.0125	35.0751	E.Mediter.Sea	
2019	12	19	10	15	46.6			1.7	30	33.4778	35.4097	Lebanon	
2019	12	20	3	57	38.5			1.3	1	33.5892	35.6614	Roum	
2019	12	20	17	24	9			1.9	13	29.8066	34.5677	East-Sinai	
2019	12	21	0	3	10.1			0.6	1	32.8936	35.5544	Hula-Kinneret	
2019	12	21	23	31	50.7			1.4	6	33.3584	35.4329	Lebanon	
2019	12	21	23	51	40.5			4.1	30	34.3702	27.8759	E.Mediter.Sea	
2019	12	22	11	27	29			5	60	32.68	48.75		
2019	12	23	21	8	8.9			2.1	10	31.4903	35.0066	Central-Israel	
2019	12	24	22	30	59.6			2.5	1	29.7909	34.6148	East-Sinai	
2019	12	25	3	58	10.8			1.2	1	33.6112	35.7129	Roum	
2019	12	25	13	13	12.5			3.2	16	29.3408	32.7366	Suez	
2019	12	26	22	5	25.4			1.5	5	33.1803	35.2961	Lebanon	
2019	12	27	1	53	8.8			5.1	10	28.87	51.42		
2019	12	27	7	2	28.1			5	10	38.32	39.06	Turkey	
2019	12	27	7	19	37.9			3.6	10	34.5097	33.8965	E.Mediter.Sea	
2019	12	28	1	40	27.6			3.5	1	34.2253	24.4816	E.Mediter.Sea	
2019	12	28	1	48	41			4	40	35.5132	32.2179	E.Mediter.Sea	
2019	12	28	3	35	32.6			2.3	18	34.8971	33.956	Cyprus	
2019	12	28	9	19	14.4			3	1	27.1996	33.8487	Red-Sea	
2019	12	28	21	26	31.2			2.8	8	36.7884	31.193	Turkey	
2019	12	28	22	4	43.7			1.2	10	33.1374	35.5833	Hula-Kinneret	
2019	12	29	9	24	55.9			2.8	1	26.9677	34.8296	Red-Sea	
2019	12	31	12	56	32.9			2.4	27	32.306	34.2116	E.Mediter.Sea	

APPENDIX B – FAULT-PLANE SOLUTIONS FOR SOME LOCAL EARTHQUAKES

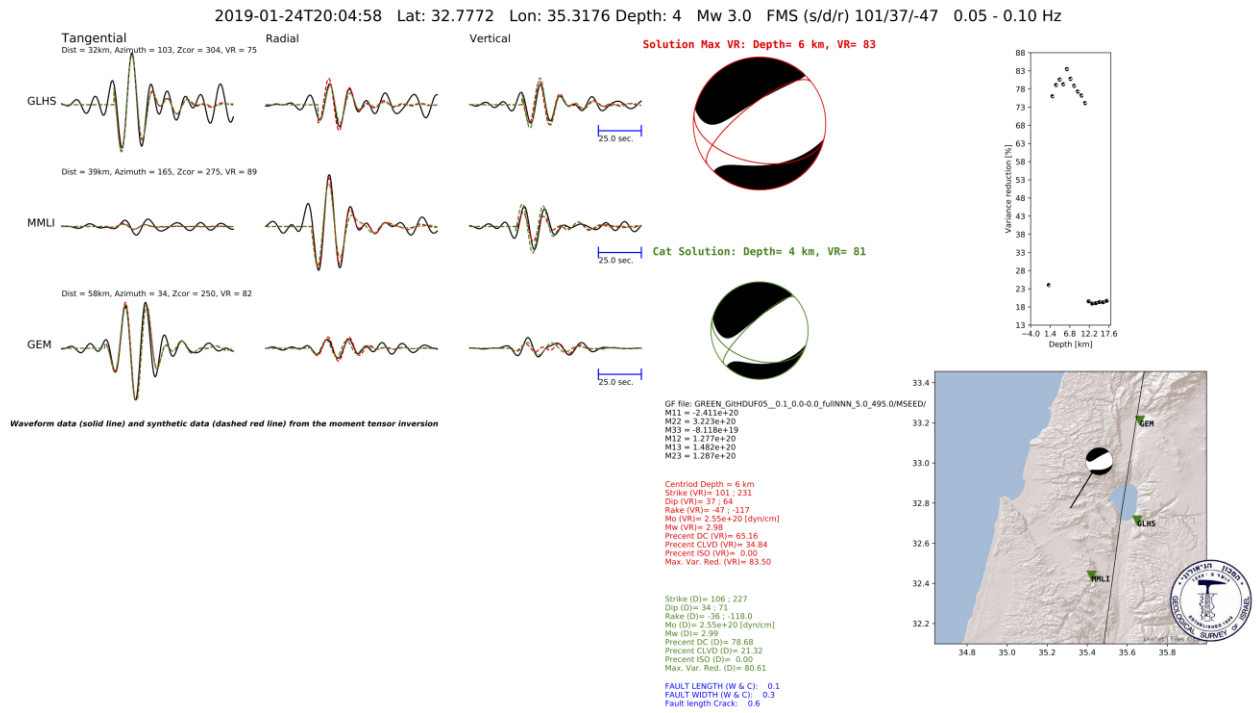


Figure B1. Fault-plane solution of the felt earthquake occurred in 24/01/2019 in the Galilee (#2 in Table 7)

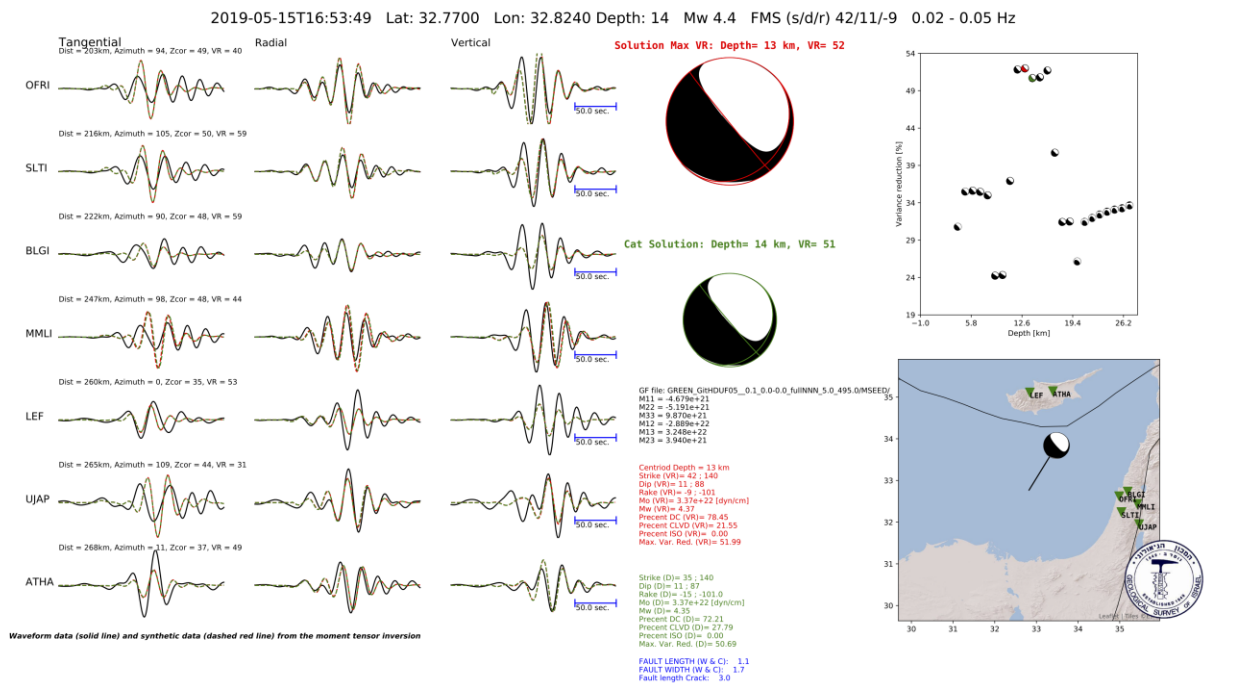


Figure B2. Fault-plane solution of the felt earthquake occurred in 05/15/2019 in the Eastern Mediterranean Sea (#3 in Table 7)

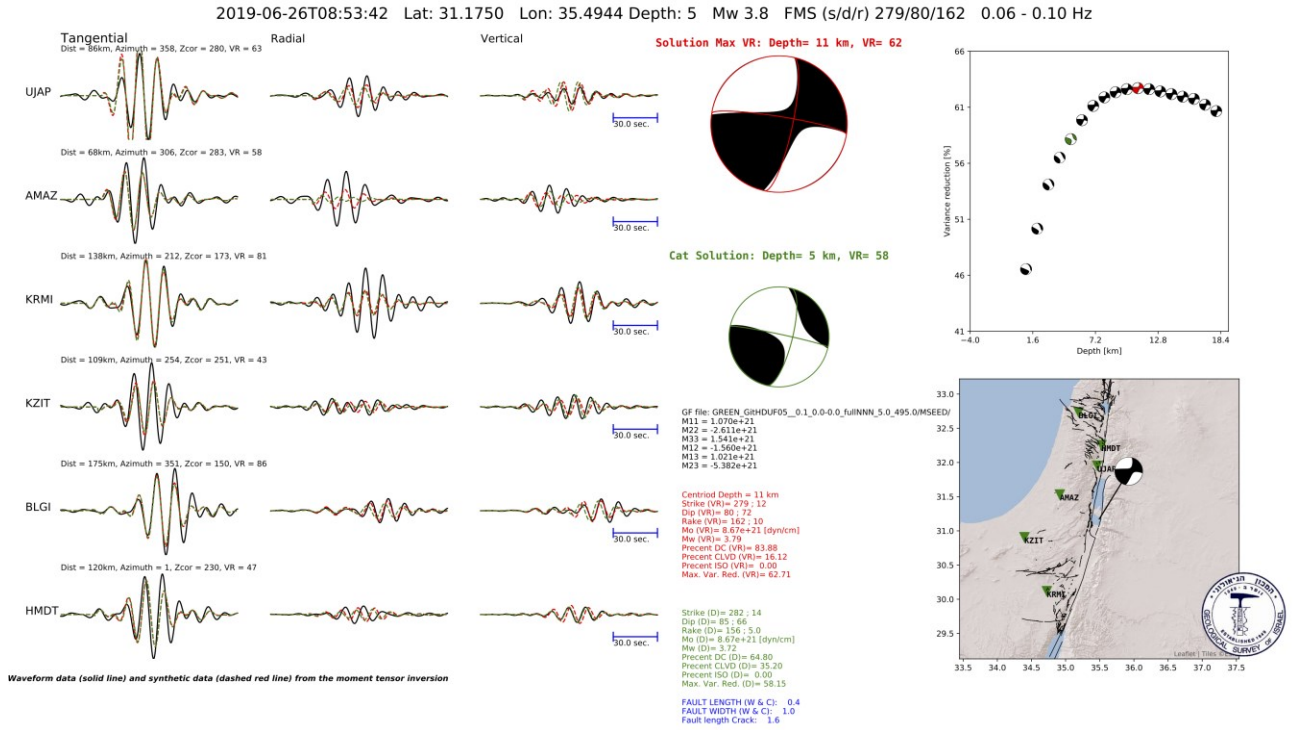


Figure B3. Fault-plane solution of the felt earthquake occurred in 26/06/2019 in the Dead Sea Basin (#4 in Table 7)

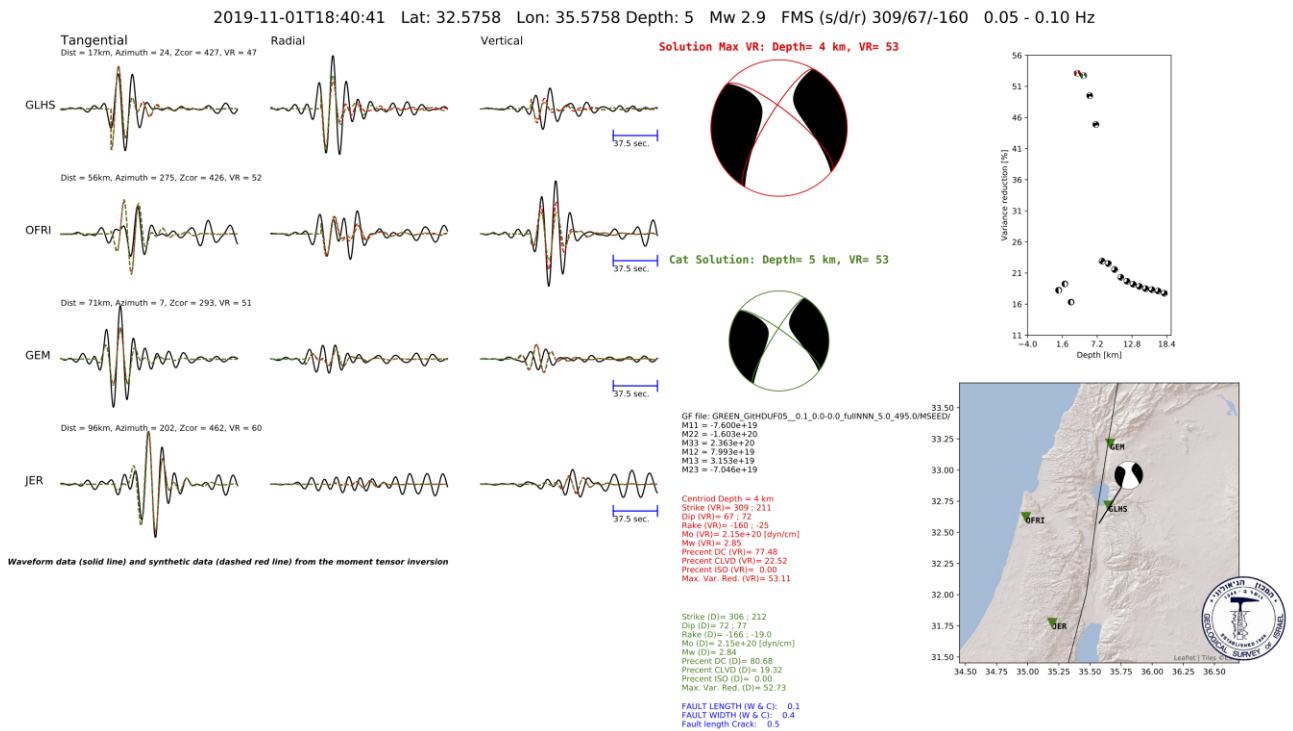


Figure B4. Fault-plane solution of the felt earthquake occurred in 01/11/2019 in the lake Kinneret (#6 in Table 7)