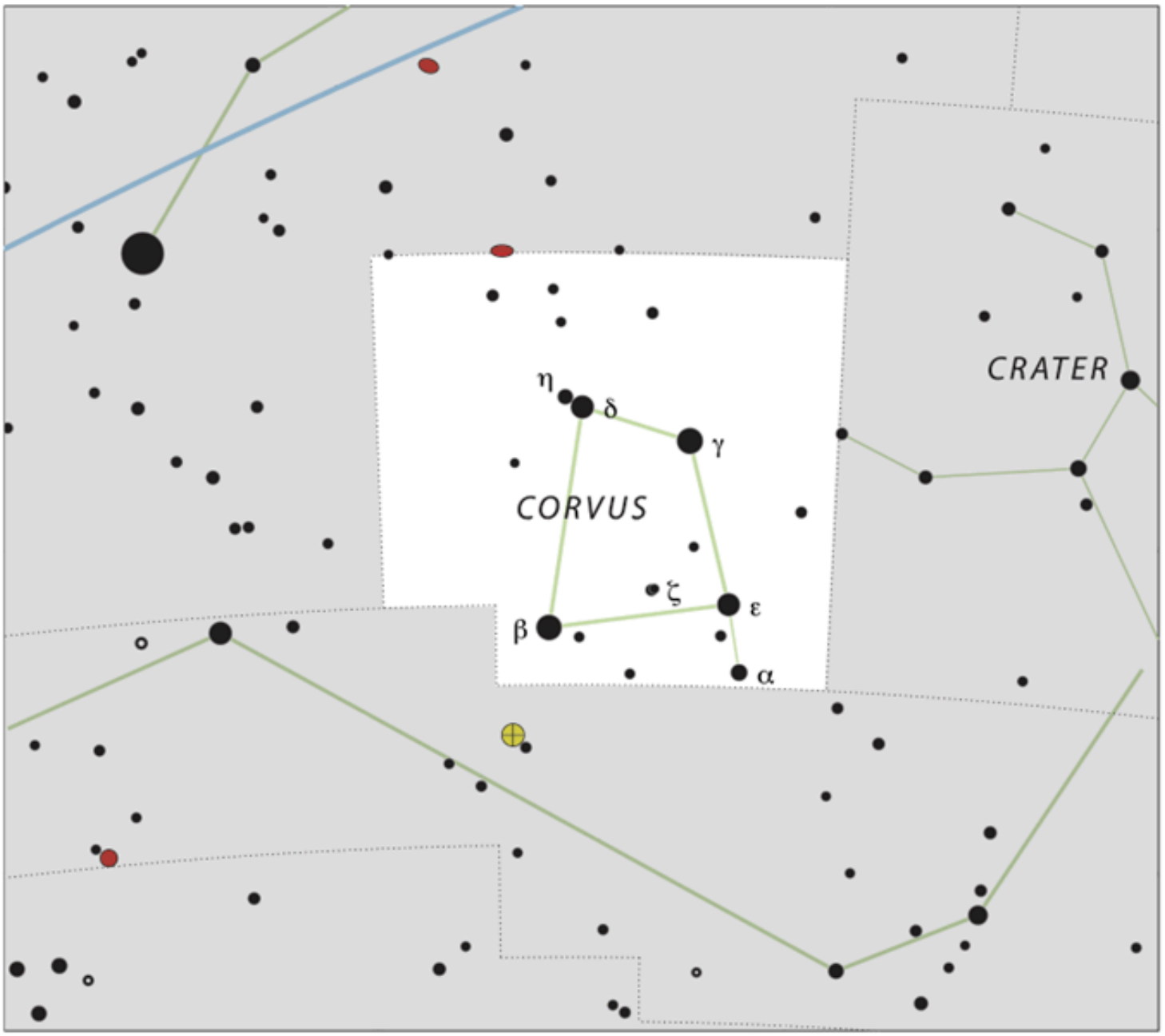
JURY - OBSERVATION TEST

Question 1 - 18 points

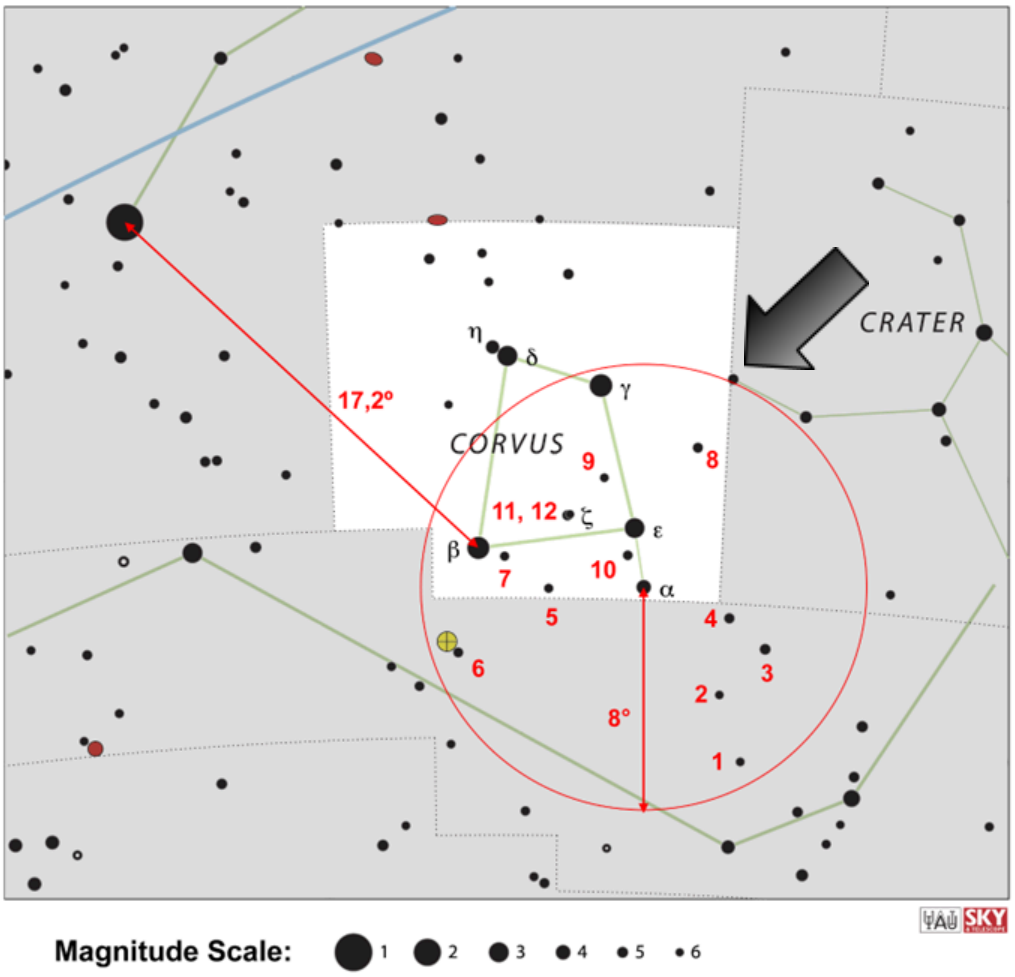
Consider that the angular distance between the stars Kraz (Beta Corvi) and Spica (Alpha Vir) is 17.2º.

Using the Star Chart, draw the circumference and count which stars between magnitudes 4 and 6 exist within a radius of 8º from Alpha Corvi.



Magnitude Scale: 1 2 3 4 5 6

- +1.5 points per star inside the circumference (numbered on the figure).
- - 1.5 points if other stars are marked, except for the star marked with an arrow
- 12 stars, total: 18 points.



2) Total: 16 points

2.1) 4 points (1 point for each Cardinal Point)

On the Star Chart, identify and mark the Cardinal Points N, E, S and W.

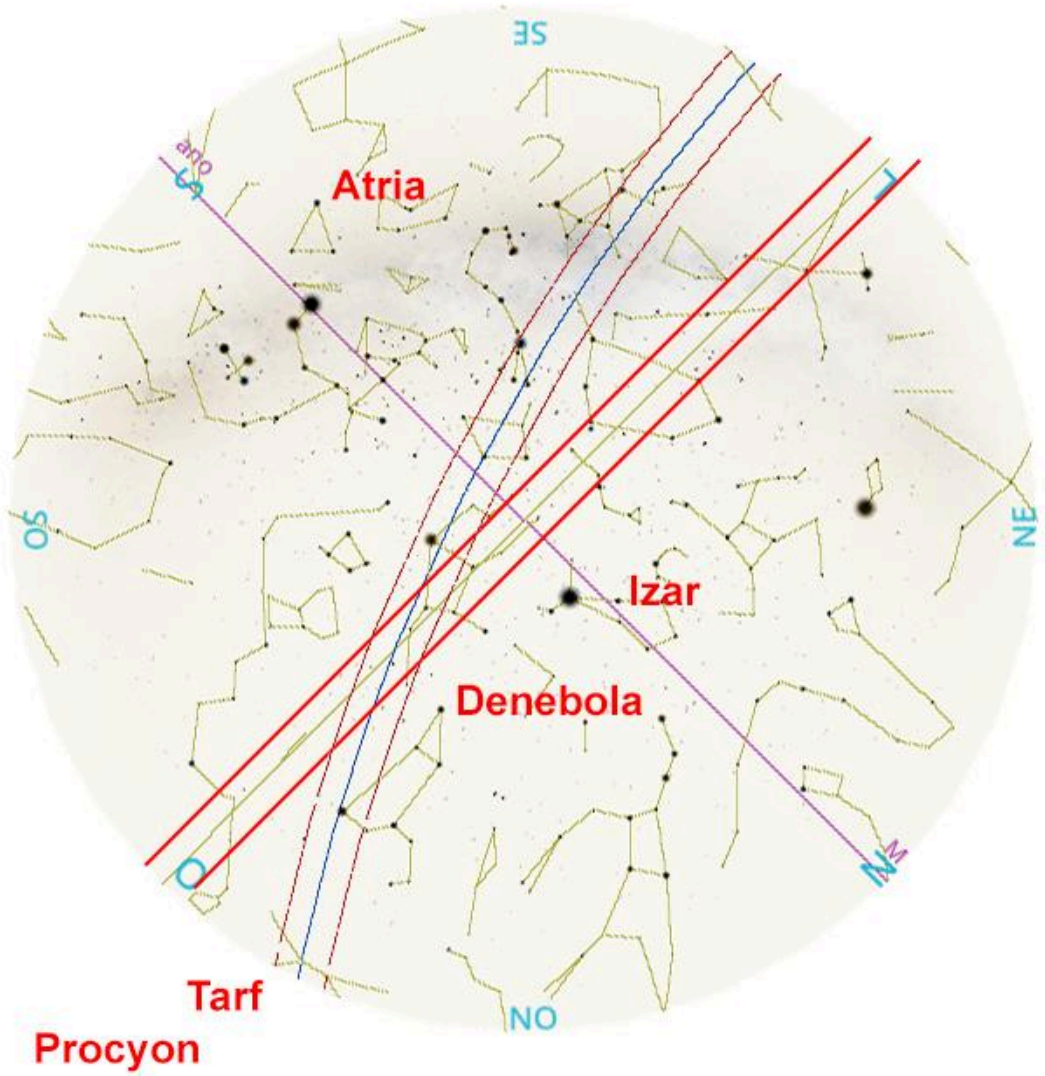
2.2) 6 points (2 points for each line)

Next, draw the Celestial Equator, the Local Meridian and the Ecliptic.

2.3) 6 points (2 points for each star and -2 point for each star outside the chart)

Present on the Celeste Chart are the stars Denebola, Izar and Atria.

Procyon α CMi	( )	Denebola β Leo	(X)	Izar ε Boo	(X)	Atria α TrA	(X)	Tarf β Cancri	( )


SE
Este
Atria
E
SO
NE
Izar
Denebola
O
N
NO
Tarf
Procyon

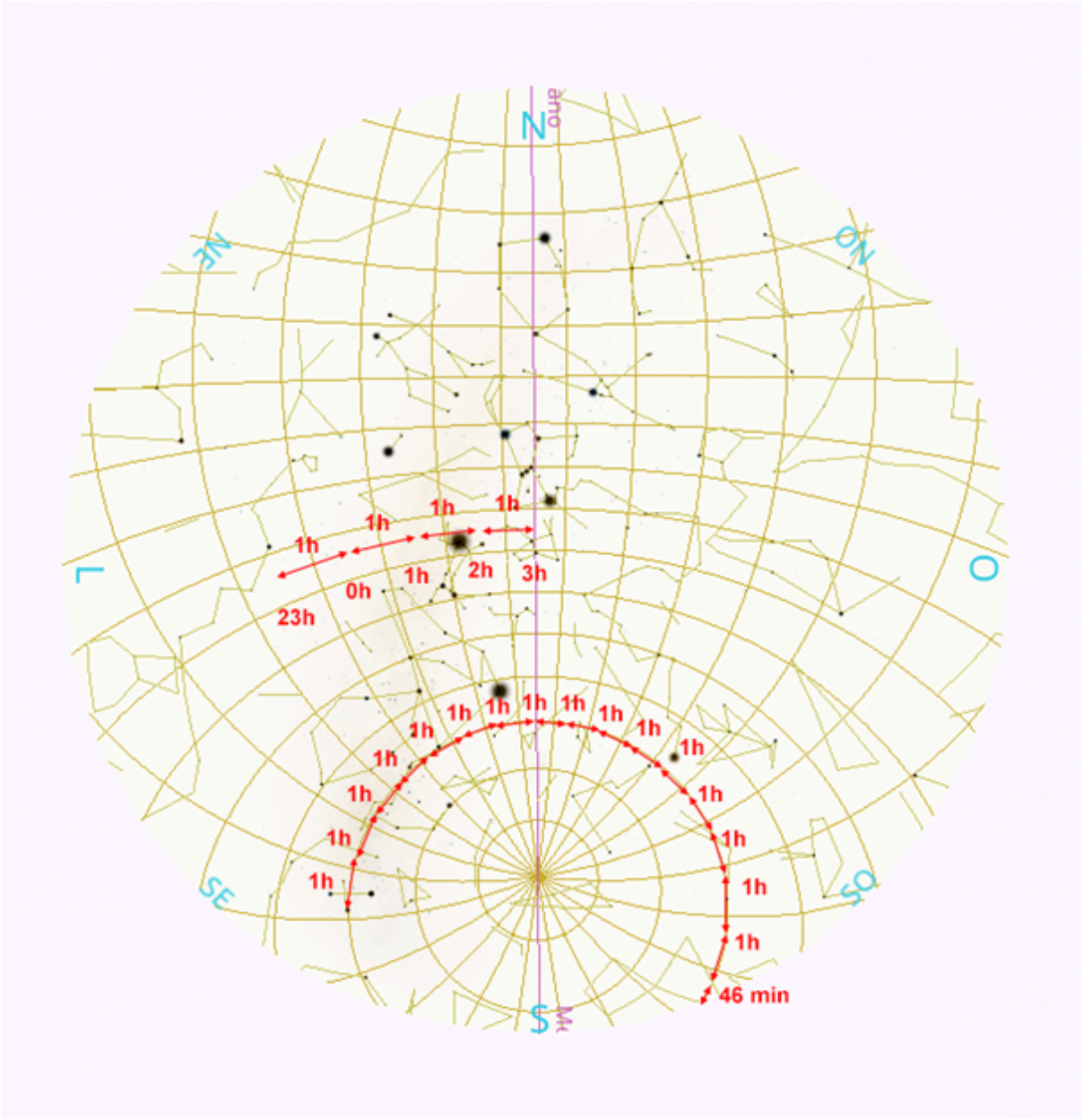
3) Total: 11 points

3.1) Total 7 points

- 4 points for identifying Alpha Hydrae (α Hya)
- 3 points if the student answers 3 am +/- 10 min
- 2 points if the student answers 3 am +/- 20 min
- 1 point if the student answers 3 am +/- 30 min

3.2) total 4 points

- 3:45 - 4:00 (4 points)
- 3:30 - 4:00 (3 points)
- 3:15 - 4:00 (2 points)
- 3:00 - 4:00 (1 point)


N
NE
NO
L
O
SE
SO
S
1h
2h
3h
0h
23h
46 min

Telescope Test

Part 1:

- The students were distributed in 6 groups, the first 5 with 40 students, the last with 32.
- The distribution in groups was made aiming to minimize the number of students of the same country in each group. When that was not possible, the students of the same country were assigned to tables as far apart as possible.
- The students were assigned to tables numbered from 1 to 40, each with a telescope initially out of focus and pointing to Az=0^o and h=0^o.
- Due to parallax, the coordinates of the target were different for each table. The table assigned to each student is given in Table 1.
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Total: 15 points (7.5 to each coordinate)

- within 1.5^o of the reference value: 7.5
- within 2.0^o of the reference value: 6.0
- larger errors: no points

Part 2:

The answer is:
Right Ascension: 01h 58m 45.87s (29,69113°)
Declination: −61° 34′ 11.7″ (-61,56991°)
Constellation: Hydrus
Name of the star: Alpha Hydri

Total: 15 points, distributed as follows

- convert Altitude into Zenith distance (1 point)
- calculate Right Ascension:
    - 01h 58m - 01h 59m (3 points)
    - 01h 57m - 02h 00m (2 points)

- calculate Hour Angle (2 points)
- calculate Declination
    - Between -62° - -61° (3 points)

- identify the star on the star chart (2 points)
- identify the name of the star (2 points)
- identify the constellation (2 points)

Table 1

Estudent	Table	Azimuth	Altitude
ARM-S-01	4	193	18
ARM-S-02	6	189	18
ARM-S-03	12	172	20
ARM-S-04	25	145	15
AUT-S-01	6	189	18
AUT-S-02	10	176	18
AUT-S-03	37	129	10
AZE-S-01	24	146	14
AZE-S-02	32	132	12
AZE-S-03	2	203	17
AZE-S-04	2	203	17
AZE-S-05	5	192	17
BAN-S-01	16	165.5	16
BAN-S-02	30	135	13
BAN-S-03	36	131	9
BAN-S-04	33	135	11
BAN-S-05	25	145	15
BRA-S-01	9	180	17
BRA-S-02	14	169	17
BRA-S-03	19	154.5	16
BRA-S-04	31	137	12
BRA-S-05	26	142	13
BUL-S-01	18	159	19
BUL-S-02	20	152	16
BUL-S-03	15	166.5	17
BUL-S-04	6	189	18
BUL-S-05	23	151	14
CAN-S-01	39	122	11
CAN-S-02	18	159	19
CAN-S-03	33	135	11
CAN-S-04	15	166.5	17
CAN-S-05	28	143	15
CHN-S-01	22	153	18
CHN-S-02	39	122	11
CHN-S-03	40	125	12
CHN-S-04	22	153	18
CHN-S-05	40	125	12
COL-S-01	19	154.5	16
COL-S-02	9	180	17
COL-S-03	18	159	19
COL-S-04	20	152	16
CRO-S-01	8	184	17
CRO-S-02	11	176	19
CRO-S-03	26	142	13
CRO-S-04	23	151	14
CRO-S-05	23	151	14
CYP-S-01	4	193	18
CYP-S-02	26	142	13
CYP-S-03	28	143	15
CYP-S-04	13	173	18
CYP-S-05	2	203	17
CZE-S-01	22	153	18
CZE-S-02	23	151	14
CZE-S-03	24	146	14
CZE-S-04	29	141	12.5
CZE-S-05	3	196	19
ECU-S-01	7	187	17
ECU-S-02	3	196	19

ECU-S-03	13	173	18
ECU-S-04	19	154.5	16
ECU-S-05	12	172	20
ESA-S-01	27	140.5	12
ESA-S-02	11	176	19
ESA-S-03	32	132	12
EST-S-04	24	146	14
GBR-S-01	10	176	18
GBR-S-02	5	192	17
GBR-S-03	31	137	12
GBR-S-04	11	176	19
GBR-S-05	10	176	18
GEO-S-01	19	154.5	16
GEO-S-02	39	122	11
GEO-S-03	38	127	9
GEO-S-04	27	140.5	12
GEO-S-05	20	152	16
GER-S-01	10	176	18
GER-S-02	24	146	14
GER-S-03	32	132	12
GER-S-04	17	162	15
GER-S-05	4	193	18
GRE-S-01	21	152	16
GRE-S-02	12	172	20
GRE-S-03	19	154.5	16
GRE-S-04	1	201.5	15
GRE-S-05	27	140.5	12
HUN-S-01	12	172	20
HUN-S-02	8	184	17
HUN-S-03	12	172	20
HUN-S-04	13	173	18
HUN-S-05	9	180	17
INA-S-01	29	141	12.5
INA-S-02	29	141	12.5
INA-S-03	30	135	13
INA-S-04	3	196	19
INA-S-05	39	122	11
IND-S-01	1	201.5	15
IND-S-02	6	189	18
IND-S-03	3	196	19
IND-S-04	28	143	15
IND-S-05	21	152	16
IRI-S-01	5	192	17
IRI-S-02	28	143	15
IRI-S-03	13	173	18
IRI-S-04	6	189	18
IRI-S-05	1	201.5	15
JPN-S-01	18	159	19
JPN-S-02	20	152	16
JPN-S-03	22	153	18
KAZ-S-01	2	203	17
KAZ-S-02	40	125	12
KAZ-S-03	10	176	18
KAZ-S-04	18	159	19
KAZ-S-05	35	131	10
KOR-S-01	35	131	10
KOR-S-02	17	162	15
KOR-S-03	24	146	14
KOR-S-04	8	184	17

KOR-S-05	18	159	19
KSA-S-01	23	151	14
KSA-S-02	13	173	18
KSA-S-03	13	173	18
LAT-S-01	17	162	15
LAT-S-02	16	165.5	16
LAT-S-03	17	162	15
LTU-S-01	33	135	11
LTU-S-02	33	135	11
LTU-S-03	16	165.5	16
LTU-S-04	31	137	12
LTU-S-05	11	176	19
MAS-S-01	38	127	9
MAS-S-02	8	184	17
MAS-S-03	7	187	17
MAS-S-04	33	135	11
NEP-S-01	9	180	17
NEP-S-02	35	131	10
NEP-S-03	34	134	11
NEP-S-04	34	134	11
NEP-S-05	31	137	12
NOR-S-01	15	166.5	17
NOR-S-02	12	172	20
NOR-S-03	4	193	18
NOR-S-04	26	142	13
NOR-S-05	34	134	11
NZL-S-01	5	192	17
NZL-S-02	38	127	9
NZL-S-03	14	169	17
PAK-S-01	26	142	13
PAK-S-02	16	165.5	16
PAK-S-03	29	141	12.5
PAK-S-04	14	169	17
PAK-S-05	4	193	18
PAR-S-01	25	145	15
PAR-S-02	30	135	13
PAR-S-03	15	166.5	17
PER-S-01	22	153	18
PER-S-02	4	193	18
PER-S-03	19	154.5	16
PHI-S-01	34	134	11
PHI-S-02	27	140.5	12
PHI-S-03	14	169	17
PHI-S-04	5	192	17
PHI-S-05	38	127	9
POL-S-01	31	137	12
POL-S-02	9	180	17
POL-S-03	2	203	17
POL-S-04	25	145	15
POL-S-05	21	152	16
POR-S-01	6	189	18
POR-S-02	7	187	17
POR-S-03	11	176	19
POR-S-04	32	132	12
POR-S-05	36	131	9
ROU-S-01	23	151	14
ROU-S-02	25	145	15
ROU-S-03	37	129	10
ROU-S-04	36	131	9

ROU-S-05	16	165.5	16
SGP-S-01	21	152	16
SGP-S-02	17	162	15
SGP-S-03	7	187	17
SGP-S-04	20	152	16
SGP-S-05	35	131	10
SLO-S-01	5	192	17
SLO-S-02	40	125	12
SLO-S-03	29	141	12.5
SLO-S-04	30	135	13
SLO-S-05	1	201.5	15
SRB-S-01	26	142	13
SRB-S-02	14	169	17
SRB-S-03	30	135	13
SRB-S-04	24	146	14
SRB-S-05	10	176	18
SUI-S-01	8	184	17
SUI-S-02	38	127	9
SUI-S-03	21	152	16
SVK-S-01	35	131	10
SVK-S-02	20	152	16
SVK-S-03	27	140.5	12
SVK-S-04	36	131	9
SVK-S-05	22	153	18
SWE-S-01	21	152	16
SWE-S-02	25	145	15
SWE-S-03	15	166.5	17
THA-S-01	32	132	12
THA-S-02	28	143	15
THA-S-03	7	187	17
THA-S-04	3	196	19
THA-S-05	37	129	10
TUR-S-01	9	180	17
TUR-S-02	15	166.5	17
TUR-S-03	17	162	15
TUR-S-04	27	140.5	12
TUR-S-05	34	134	11
UAE-S-01	36	131	9
UKR-S-01	2	203	17
UKR-S-02	32	132	12
UKR-S-03	37	129	10
UKR-S-04	37	129	10
UKR-S-05	14	169	17
URU-S-01	39	122	11
URU-S-02	11	176	19
URU-S-03	40	125	12
USA-S-01	1	201.5	15
USA-S-02	7	187	17
USA-S-03	29	141	12.5
USA-S-04	1	201.5	15
USA-S-05	3	196	19
VIE-S-01	31	137	12
VIE-S-02	8	184	17
VIE-S-03	30	135	13
VIE-S-04	16	165.5	16
VIE-S-05	28	143	15