Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of Intelsat License LLC Application to Modify Authorization to Relocate Galaxy 26 to 50.0° E.L.	)	File No. SAT-MOD-20110420-00073 Call Sign: S2469

REPLY COMMENTS OF AL YAH SATELLITE COMMUNICATIONS COMPANY PRJSC

Al Yah Satellite Communications Company PrJSC ("Yahsat") replies to the Opposition filed in this proceeding on June 21, 2011 by Intelsat License LLC ("Intelsat"). Intelsat's Opposition simply does not address the interference concerns or the arguments raised in Yahsat's Comments of June 6, 2011. In particular, Intelsat once again declines to demonstrate that its proposed operations would be compatible with those of Yahsat-1A, which is operating in accordance with the ITU Rules and Regulations governing the use of planned BSS bands. Furthermore, Intelsat provides no indication that Turkey has made any ITU filings to support Intelsat's proposed operations at 50.0° E.L., and there is no dispute Intelsat would have the same issues even if Turkey were to submit ITU filings for that location.

Nor is there any dispute that Galaxy 26 had to be relocated from 50.75° E.L. in order to reduce interference with Yahsat-1A. The key issue is that Intelsat has not satisfied its burden to establish that Galaxy 26's proposed relocation to 50.0° E.L.—less than one degree away from its current position—would be sufficient to resolve that interference issue.[1]

[1] As noted in Yahsat's Comments, Intelsat considers only the operation of a nearby FSS satellite similar to Galaxy 26, and does not take into the account the parameters of the BSS payload on Yahsat-1A (even though the underlying reason for this application is the need to relocate Galaxy 26 to protect Yahsat-1A). *See* IBFS File No.

Intelsat does not provide the information described in Section 25.114(d)(13) of the Commission's Rules, which would facilitate an analysis of the technical compatibility of the proposed operations with the ITU's Appendix 30 BSS Plan, including those networks (such as Yahsat-1A) that have been implemented in accordance with that Plan.[2] Intelsat offers no explanation for not providing this information, nor does it distinguish its case from others in which the Commission declined to grant a license to applicants that failed to make that showing.[3]

Rather than making the required technical showing, Intelsat rests entirely on its asserted willingness to (i) "operate Galaxy 26 pursuant to . . . a condition requiring operation on a noninterference, non-protected basis" and (ii) continue discussions with Yahsat to "ensure that operation of Galaxy 26 at 50.0° E.L. does not cause harmful interference to current or future Yahsat-1A operations."[4] While Yahsat appreciates Intelsat's recognition that it must operate on a non-interference basis, that commitment is a legally inadequate substitute for a prior, affirmative technical showing such as that described in Section 25.114(d)(13) of the Commission's Rules. Similarly, Intelsat's willingness to *continue* coordination negotiations with Yahsat is no substitute for the *completion* of such negotiations prior to grant of the requested license modification, particularly when there is no record basis for believing that such coordination can be achieved.

Clear and compelling policy reasons require that Intelsat make a full interference showing *before* the Commission processes this application any further. In

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SAT−MOD−20110420−00073, Engineering Statement at 4-5. Thus, there is no record basis for Intelsat's assertion that moving Galaxy 26 to 50.0° E.L. would allow Galaxy 26 and Yahsat-1A to operate without harmful interference.

2 47 C.F.R. § 25.114(d)(13).

3 *See, e.g.*, *Morning Star Satellite Company, L.L.C.*, 16 FCC Rcd 11550, at ¶ 17 n.40 (2001) (request to use Region 1 BSS spectrum for FSS purposes requires submission of relevant information with respect to the ITU's BSS Plans).

4 Opposition at 2.

particular, such a requirement (i) correctly places the burden of demonstrating compatibility squarely on the secondary user (*i.e.*, Intelsat), and does not require primary users (*i.e.*, Yahsat) to first suffer a disruptive interference event, and then file an interference complaint either with the Commission or through international channels; (ii) avoids enmeshing the Commission in an international interference dispute that almost certainly would arise given the nature of Intelsat's proposed operations (see below); and (iii) protects primary operations in a manner consistent with the ITU's Radio Regulations, the ITU's Appendix 30 BSS Plan, and the international obligations of the United States. Intelsat does not establish that these policy objectives can be realized through *ex post facto* enforcement of noninterference conditions. Moreover, Intelsat neither requests nor provides any basis for a waiver of Section 25.114(d)(13).

Yahsat stresses that there are important practical differences between the Commission (i) not licensing a secondary user until it makes an adequate showing of technical compatibility and (ii) being forced to shut off an interfering secondary user that already holds a license to operate. In the former case, there is no obvious threat to the operations of the primary user, or its ability to market its services or attract additional investment, because the primary user is assured that it has full legal protections before the secondary user ever poses an interference threat. In the latter case, the primary user, after its business has experienced an interruption, must involve the Commission in a time-consuming and costly process to determine whether interference has occurred, identify the source of that interference, and ensure the enforcement of an appropriate remedy. Shutting down a secondary user like Intelsat could be particularly challenging where the earth stations used to communicate with Galaxy 26 are subject to the jurisdiction of foreign countries and are not within the jurisdiction of the Commission. Accordingly, authorizing Galaxy 26 to operate at

50.0° E.L. on a permanent basis could compromise significantly Yahsat's ability to operate its recently-launched network at 52.5° W.L. once it is fully implemented.

The need for careful technical analysis *prior* to further processing of Intelsat's license modification application is particularly important where, as here, good reason exists to doubt Intelsat's technical ability to operate on a noninterference basis. The Commission recently granted Intelsat special temporary authority ("STA") to operate Galaxy 26 until August 9, 2011 following its initial drift to 50.0° E.L.—even though Intelsat had not provided a proper interference analysis for the situation at hand—in an apparent effort to expedite the provision of service to certain U.S. government users.[5] In granting that STA, the Commission required Intelsat to operate on a noninterference basis, and specifically required Intelsat to comply with the power-flux density ("PFD") limits specified in Appendix 30 of the ITU Radio Regulations for protection of co-frequency BSS and terrestrial operators.[6] Notably, Yahsat's technical analysis indicates that Intelsat's operations, as proposed in its modification application, would exceed those PFD limits by a factor of about 20 (see Attachment 1). As such, there is a high likelihood that Intelsat would not be able to comply with noninterference conditions that the Commission already has determined would be necessary (at a minimum) to protect adjacent, primary operations.

Strong evidence exists that Intelsat likely would be required in the near future to cease operations in order to protect Yahsat's operations only 2.5 degree away. This result would be necessary, but would hardly serve the interests of Intelsat's U.S. government users,

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5 *See* IBFS File No. SAT-STA-20110314-00053 (granted June 10, 2011). Notably, that STA grant is not one relating to an "activity of a continuing nature," and therefore is not eligible for "automatic extension" by virtue of the mere filing of an extension request. *See* IBFS File No. SAT-STA-20110314-00053, Grant, Condition 14.

6 *See* IBFS File No. SAT-STA-20110314-00053, Grant, Condition 6.b.

which may be entirely unaware of the risk to which they have been subjected by Intelsat.[7] In short, while the "noninterference approach" may have been a basis for granting Intelsat STA (when time was of the essence for the relocation of Galaxy 26), the Commission should not relax its technical rules for any extended period of time based on the false security provided by noninterference conditions that are unlikely to be satisfied.

Although Intelsat does not make the argument explicit, Intelsat suggests that its failure to make an affirmative interference showing should not concern the Commission because Intelsat is engaged in ongoing coordination negotiations with Yahsat. Yahsat remains committed to continuing those negotiations. However, in situations such as this where the proposed operations appear incompatible with pre-existing systems operating in accordance with ITU Rules and Regulations, Commission precedent provides that such negotiations be concluded, and an appropriate agreement reached, *before* the Commission grants any long-term authority allowing Intelsat to provide service over Galaxy 26 at 50.0° E.L.[8] As noted above, Intelsat's proposed operations would exceed the PFD limit imposed in the STA, and thus would cause harmful interference to adjacent, primary users like Yahsat. Moreover, Intelsat's incentives to reach a coordinated solution that respects Yahsat's ITU rights will be diminished significantly once Intelsat has additional operating authority in hand.

It bears emphasis that *no* ITU filings have been made to support Intelsat's proposed operations. While Intelsat again asserts that "[a]t 50.0° E.L, Galaxy 26 will operate

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7 For this reason, Intelsat's STA should be modified to require Intelsat to inform its customers that service from Galaxy 26 is subject to coordination with other operators, and that Intelsat may be required to discontinue or alter service as a result of such coordination. *See, e.g.*, *EchoStar Satellite L.L.C.*, 21 FCC Rcd 14045, at ¶ 17 (2006).

8 *See Loral Orion Services*, 14 FCC Rcd 17665 (1999) (precluding commercial operations pending completion of coordination with adjacent operators).

as a U.S.-licensed spacecraft pursuant to the ITU filings of the Turkish Administration,"[9] Intelsat identifies no such ITU filings. As Yahsat noted in its Comments, currently there are no Turkish filings at 50.0° E.L. that encompass the 11.7-12.2 GHz band, and even Intelsat's own STA request admits as much.[10]

* * * * *

As noted above, Yahsat remains committed to continuing its ongoing coordination negotiations with Intelsat with a view toward the parties reaching a mutually acceptable agreement that will (i) allow Intelsat to operate without compromising the operations of the recently-launched Yahsat-1A; (ii) provide due protection for the EMARSAT-1 network; and (iii) have due consideration for ITU requirements. However, for the reasons set forth above and in Yahsat's initial Comments, the Commission should not grant Intelsat's application to operate Galaxy 26 at 50.0° E.L. on a permanent basis. Intelsat has not shown that the proposed operations of Galaxy 26 would protect adjacent, primary users (including Yahsat). Moreover, Intelsat has not completed coordination with all such users.

To the extent the Commission wishes to authorize Intelsat's continued operations at 50.0° E.L., the better course would be for the Commission to hold this application in abeyance and instead consider requests from Intelsat to extend its existing STA for successive 60-day periods. Such an approach would give the Commission and other interested parties, like Yahsat, the opportunity to evaluate fully the evolving interference environment in the vicinity of 50.0° E.L.

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9 Opposition at 2.

10 IBFS File No. SAT-STA-20110314-00053 at 1 ("Although Turkey's ITU filings currently do not contain the frequency band 11700-12200 MHz, Intelsat intends to ask Turkey to file for that band.").

Respectfully submitted,

__/s/ *John P. Janka*_____

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July 1, 2011

CERTIFICATE OF SERVICE

I, Patricia C. Robbins, hereby certify that on this 1st day of July, 2011, I caused to be served a true copy of the foregoing "Reply Comments of Al Yah Satellite Communications Company PrJSC," by first class mail, postage pre-paid (or as otherwise indicated) upon the following:

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/s/ *Patricia C. Robbins*
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ATTACHMENT 1

1.0 Background

Intelsat License LLC ("Intelsat") has a pending application before the Commission to modify the authorization for the Galaxy 26 satellite to permit it to operate at 50° E.L.[1] Intelsat recently received from the Commission Special Temporary Authority to operate the satellite at 50° E.L. and to provide services using the 11.7-12.2 GHz band for downlink transmissions.[2] The coverage area of the Galaxy 26 satellite includes countries located within ITU Regions 1 and 3. Use of the 11.7-12.2 GHz band is subject to the ITU's Appendix 30 BSS Plan in Regions 1 and 3.

Al Yah Satellite Communications Company PrJSC ("Yahsat") operates the C-/Ku-/Ka-band Yahsat-1A satellite at the 52.5° E.L. location. The satellite uses the 11.7-12.2 GHz band to provide BSS services to the Middle East, Northern Africa, Southwest Asia and Europe. Subscriber antennas can be as small as 60 cm, and possibly less in some areas. The satellite's Ku-band payload operates under the EMARSAT-1 ITU BSS network.

In granting Intelsat's STA request, the Commission imposed several important conditions on the operations of the Galaxy 26 satellite network, including the condition specified in paragraph 6 (b). This condition, *inter alia*, requires that Intelsat not exceed the PFD levels specified in the ITU Radio Regulations, Appendix 30, Annex 1, Section 1(a).

2.0 Discussion

The Commission is well aware of the challenges of successfully coordinating two co-frequency, co-coverage BSS satellites that have a 4.5 degree separation (i.e., "tweeners"). In this case, the interference situation is exacerbated by the smaller 2.5 degree separation between the Yahsat and

[1] *See* IBS File No. SAT-MOD-20110420-00073.
[2] *See* IBS File No. SAT-STA-20110314-00053.

Intelsat satellites. The two satellites use the same downlink frequency band, therefore they are co-frequency, and the two satellites are essentially co-coverage.

Figures 1 through 3 in Annex 1 show the coverage overlap between the GALAXY 26 satellite and the three beams of the EMARSAT-1 network. It can be seen that there is significant coverage overlap between the networks.

In its pending license modification application, Intelsat states that it will operate the Galaxy 26 satellite such that the Ku-band downlink transmissions will be limited to those levels contained in Section 25.212(c) of the FCC Rules. For digital carriers, this is equivalent to a downlink EIRP density of -26 dBW/Hz. Intelsat goes on to state that higher levels could be transmitted if successfully coordinated, but in any event, Intelsat Ku-band downlink transmissions would not exceed an EIRP density of -24.3 dBW/Hz.

Even using the lower interfering downlink EIRP density of -26 dBW/Hz, simple C/I calculations demonstrate that Yahsat downlink transmissions could experience C/I's of less than 10 dB, dependant on the location of the subscriber's antenna relative to the Galaxy 26 satellite's downlink beam. Clearly a single-entry C/I of less than 10 dB equates to harmful interference. No U.S. BSS satellite operator could provide a commercially viable service if its satellite networks were to be subjected to such low C/I levels.

Notably, even using the lower interfering downlink EIRP density of -26 dBW/Hz, Intelsat's proposed operations are inconsistent with the PFD limits specified in Appendix 30 of the ITU's Radio Regulations. The relevant calculations are set forth in Annex 2. Note that the Yahsat 1A satellite transmits 24 hours per day.

Also noteworthy is that in its pending application, Intelsat includes link budgets that include TV/FM carriers. Yahsat believes these are simply "legacy" link budgets and that Intelsat has no intention of transmitting TV/FM carriers from 50° E.L. Yahsat is opposed to any Galaxy 26 TV/FM transmissions from 50° E.L. and respectfully requests the Commission to restrict all Galaxy 26 transmissions to digital modulation.

CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING ENGINEERING INFORMATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained herein, that I am familiar with Part 25 of the Commission's Rules, that I have prepared the engineering information and that it is complete and accurate to the best of my knowledge and belief.

/s/

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ANNEX 1

Figure 1. Coverage overlap between the Galaxy 26 satellite and the EMARSAT-1 network's MENA beam; -2, -4 and -6 dB contours shown (red = Galaxy 26; green = EMARSAT-1).

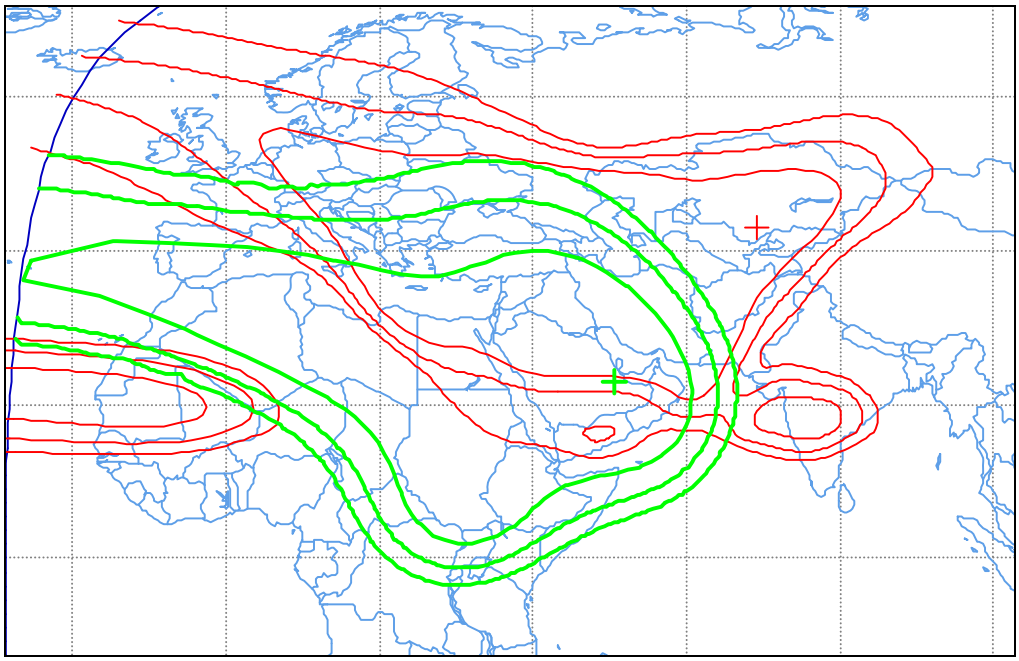


Figure 2. Coverage overlap between the Galaxy 26 satellite and the EMARSAT-1 network's European beam; -2, -4 and -6 dB contours shown (red = Galaxy 26; green = EMARSAT-1).

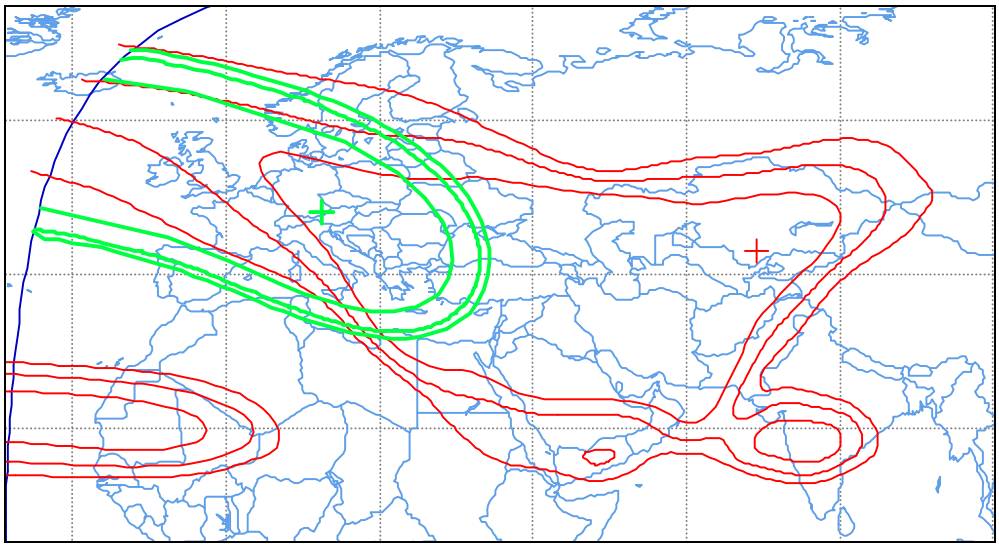
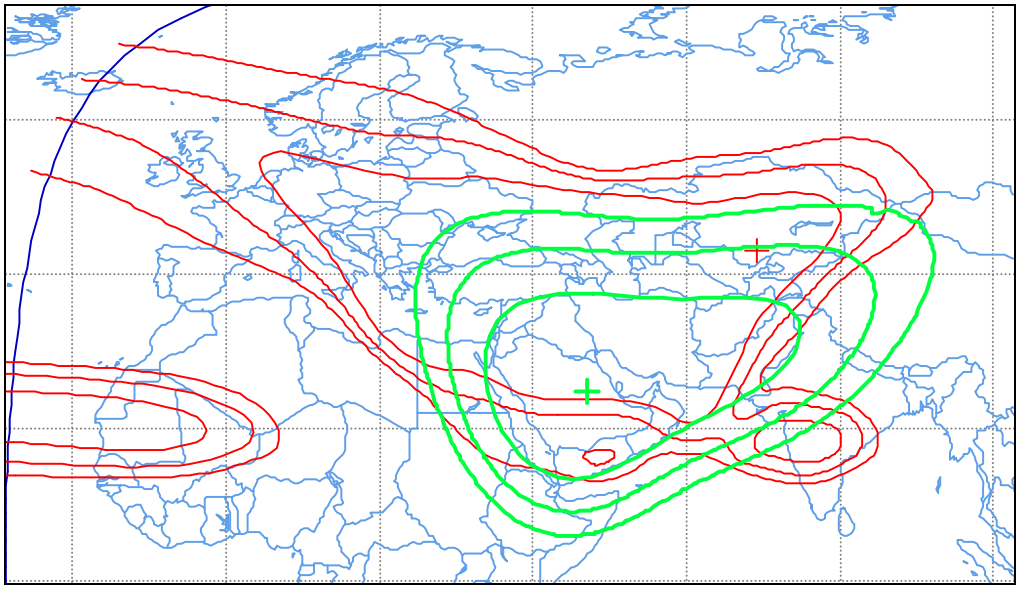


Figure 3. Coverage overlap between the Galaxy 26 satellite and the EMARSAT-1 network's Eastern beam; -2, -4 and -6 dB contours shown (red = Galaxy 26; green = EMARSAT-1).



ANNEX 2

The PFD values contained in Appendix 30, Annex 1, Section 1(a) of the ITU Radio Regulations are reproduced below:

a) under assumed free-space propagation conditions, the power flux-density at any test point within the service area associated with any of its frequency assignments in the Plan or in the List or for which the procedure of Article 4 has been initiated, does not exceed the following values:

-147 dB(W/(m^2 · 27 MHz))	for $0° \leq \theta < 0.23°$
$-135.7 + 17.74 \log \theta$ dB(W/(m^2 · 27 MHz))	for $0.23° \leq \theta < 2.0°$
$-136.7 + 1.66\ \theta^2$ dB(W/(m^2 · 27 MHz))	for $2.0° \leq \theta < 3.59°$
$-129.2 + 25 \log \theta$ dB(W/(m^2 · 27 MHz))	for $3.59° \leq \theta < 9°$

where θ is the minimum geocentric orbital separation in degrees between the wanted and interfering space stations, taking into account the respective East-West station-keeping accuracies;

Taking into account the East-West station-keeping tolerances of the two satellites, the geocentric orbital separation is 2.4 degrees. The corresponding PFD level at each test point of the EMARSAT-1 ITU network can then be calculated to be -127.1 dB(W/(m^2 · 27 MHz)). From this, the maximum allowable downlink EIRP density that the Galaxy 26 satellite can transmit towards each test point of the EMARSAT-1 network, while conforming to condition 6 (b) of the Commissions STA grant, can be calculated. The results of such calculations are provided in Table 1 below.

Table 1. Maximum allowable downlink EIRP densities that Galaxy 26 can transmit towards the test points of the EMARSAT-1 network.

EMARSAT-1 Test Point Coordinates		**Allowable Downlink EIRP Density per Hz (dBW/Hz)**	**Allowable Downlink EIRP Density per 27 MHz (dBW/27 MHz)**
Longitude (°E)	**Latitude (°N)**		
46.76	24.04	-39.2	35.1
49.24	18.96	-39.3	35.0
50.16	29.93	-39.1	35.2
52.38	17.64	-39.3	35.0
54.21	31.33	-39.1	35.2
56.46	18.27	-39.3	35.0
59.51	29.39	-39.1	35.2

61.39	25.37	-39.2	35.1
-9.43	38.93	-38.4	36.0
-6.72	34.17	-38.4	35.9
-6.7	38.79	-38.4	35.9
-2.27	31.19	-38.5	35.8
0.37	40.42	-38.5	35.8
12.51	37.79	-38.7	35.6
14.11	30.8	-38.8	35.5
22.28	10.95	-39.1	35.2
23.92	19.58	-39.1	35.2
24.39	26.43	-39.0	35.3
25.73	35.25	-38.9	35.4
27.64	4.41	-39.2	35.1
32.08	3.56	-39.3	35.0
36.42	4.17	-39.3	35.0
37.07	10.76	-39.3	35.0
43.41	12.14	-39.3	35.0
44.18	38.43	-39.0	35.3
50.23	30.23	-39.1	35.2
53.19	16.69	-39.3	35.0
59.83	22.47	-39.2	35.1
33.9	29.9	-39.1	35.2
34	25.12	-39.1	35.2
35.4	33.62	-39.0	35.3
35.78	19.8	-39.2	35.1
38.2	16.73	-39.3	35.1
39.43	36.65	-39.0	35.3
41.51	14.19	-39.3	35.0
44.38	37.7	-39.0	35.3
45.38	13.59	-39.3	35.0
50.28	37.2	-39.0	35.3
52.23	15.65	-39.3	35.0
64.35	36.78	-39.0	35.3
70.51	26.35	-39.1	35.2
72.56	36.06	-39.0	35.3
74.5	31.33	-39.0	35.3
59.34	21.45	-39.2	35.1
67.21	24.56	-39.2	35.1
-8.96	43.13	-38.3	36.0
-0.66	40.08	-38.5	35.8
7.53	36.69	-38.7	35.7
10.73	35.56	-38.7	35.6
30.34	36.54	-38.9	35.4
30.86	37.16	-38.9	35.4
31.77	38.94	-38.9	35.4

32.26	41.6	-38.9	35.4
31.04	46.96	-38.8	35.5
28.6	50.63	-38.7	35.6
27.32	52.07	-38.6	35.7
23.3	55.47	-38.6	35.8
21.5	56.71	-38.5	35.8
17.11	59.08	-38.4	35.9
12.88	61	-38.4	35.9
8.93	62.49	-38.3	36.0
32.47	34.72	-39.0	35.3
34.63	18.42	-39.2	35.1
35.83	38.41	-39.0	35.4
42.93	40.1	-39.0	35.4
43.41	12.11	-39.3	35.0
43.99	35.91	-39.0	35.3
48.24	28.89	-39.2	35.2
50.07	14.83	-39.3	35.0
56.05	25.59	-39.2	35.1
58	39.52	-39.0	35.3
57.8	19	-39.3	35.0
72.13	39.89	-38.9	35.4
47.47	26.28	-39.2	35.1
47.95	21.08	-39.3	35.1
48.66	28.03	-39.2	35.1
52.42	25.69	-39.2	35.1
53.49	18.01	-39.3	35.0
56.06	25.86	-39.2	35.1
58.8	20.45	-39.3	35.1
59.14	23	-39.2	35.1
43.41	39.06	-39.0	35.3
47.88	28.79	-39.2	35.2
58.95	20.52	-39.3	35.1