

KIC 007841640

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007841640-01	OBS	No	1.716619	132.218549	3.5	12.498	8.5	2.2	2.77	6886	0.54	13678.52
007841640-03	OBS	No	79.992434	176.697388	225.8	3.966	16.8	15.2	2.77	6886	4.85	81.57
007841640-04	OBS	No	32.448993	134.941138	264.1	1.099	15.4	11.6	2.77	6886	4.61	271.65
007841640-05	OBS	No	79.660484	146.688969	232.0	3.286	14.9	13.1	2.77	6886	4.72	82.03
007841640-06	OBS	No	15.842593	142.699268	143.4	2.022	13.4	13.3	2.77	6886	3.36	706.59
007841640-07	OBS	No	46.025128	133.576410	153.7	5.475	12.8	11.3	2.77	6886	3.97	170.46
007841640-08	OBS	No	22.135742	152.672679	123.6	3.686	13.0	12.1	2.77	6886	3.48	452.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007841640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007841640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007841640-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

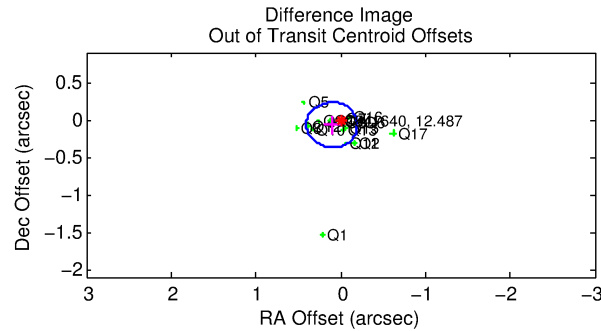
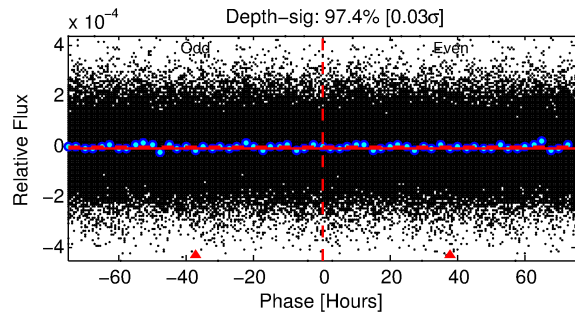
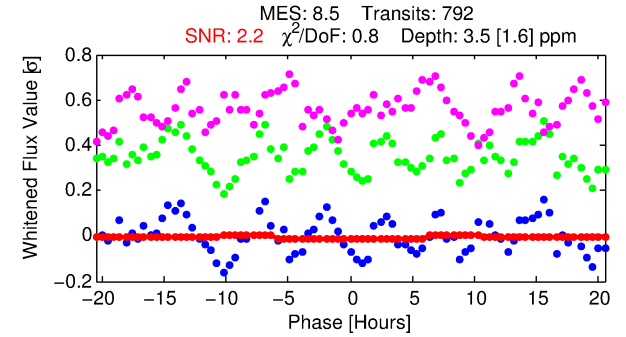
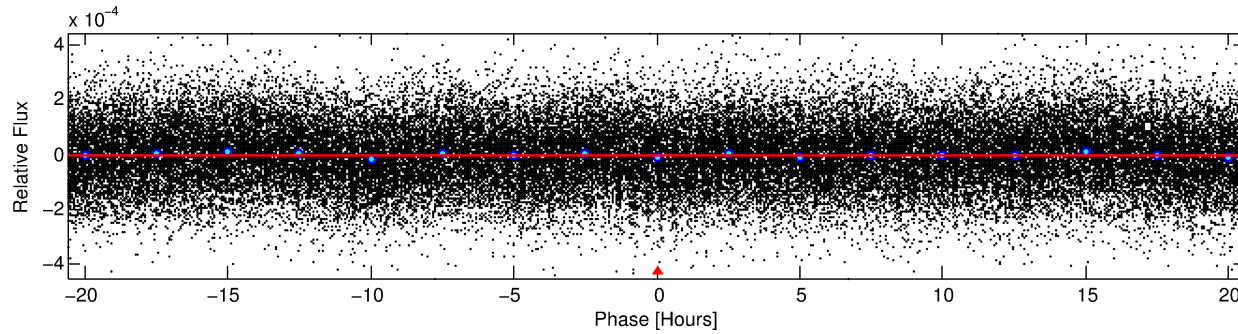
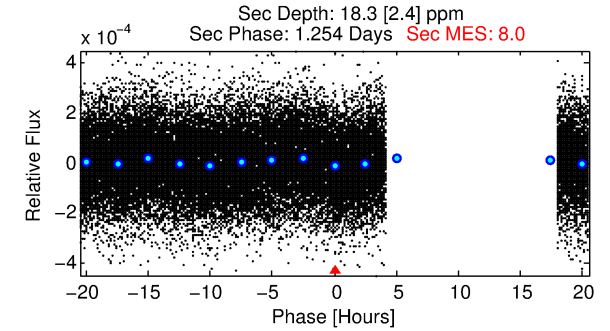
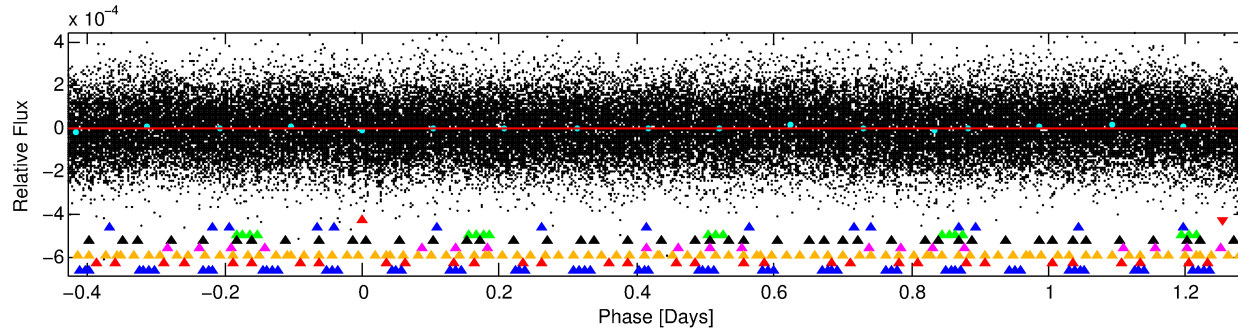
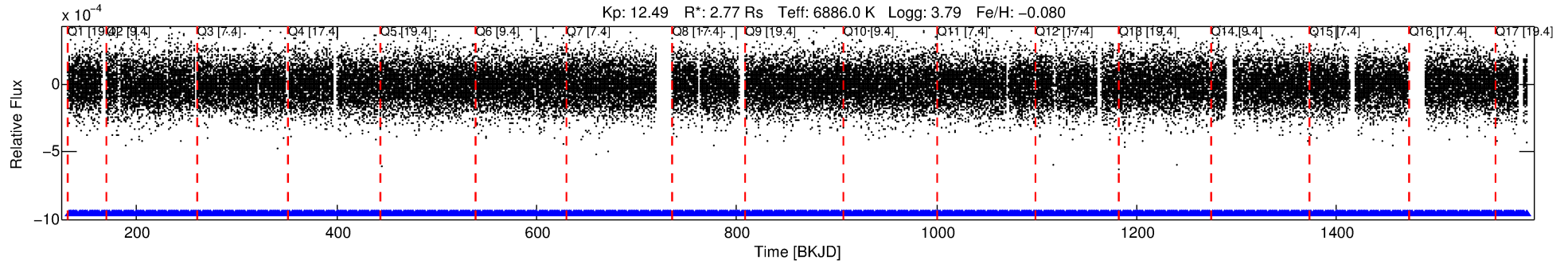
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007841640-01

No Significant Match Found

DV One-Page Summary

KIC: 7841640 Candidate: 1 of 8 Period: 1.717 d



DV Fit Results:

Period = 1.71662 [0.00011] d
Epoch = 132.2185 [0.0262] BKJD
Rp/R* = 0.0018 [0.0021]
a/R* = 1.18 [2.28]
b = 0.46 [11.46]
Seff = 13678.52 [7220.59]
Teq = 2758 [364] K
Rp = 0.54 [0.66] Re
a = 0.0337 [0.0111] AU
Ag = 39.38 [95.28] [0.40σ]
Teffp = 10681 [6327] K [1.25σ]

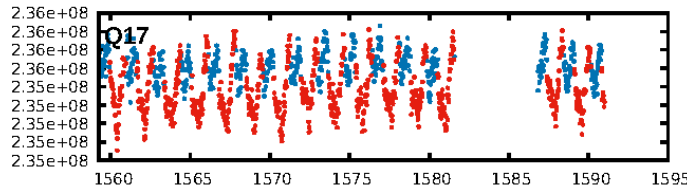
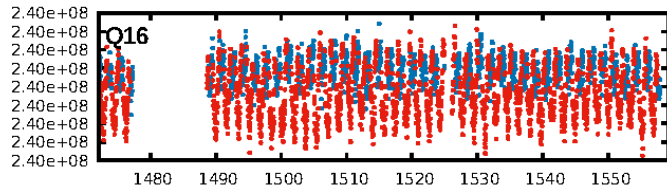
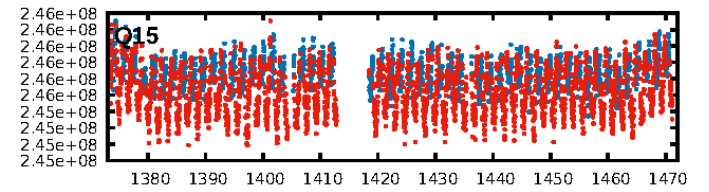
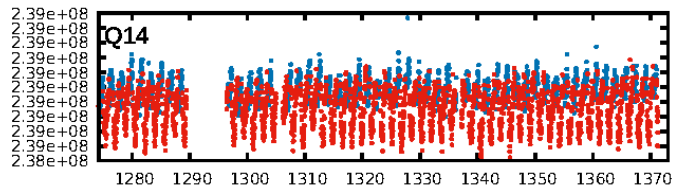
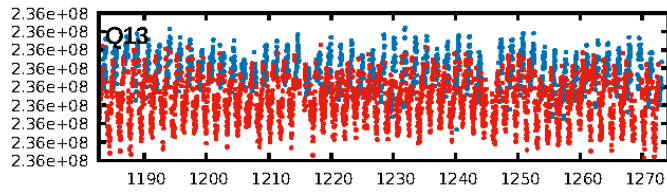
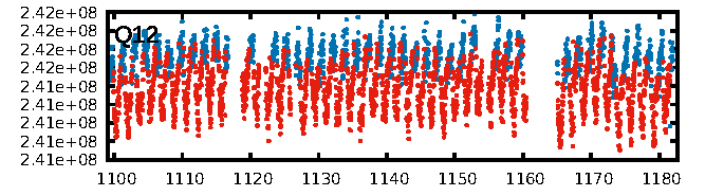
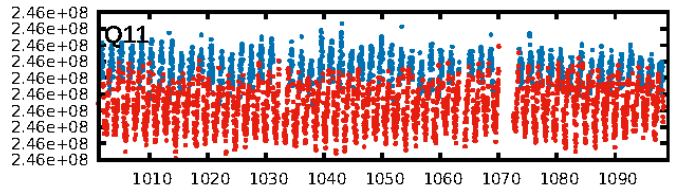
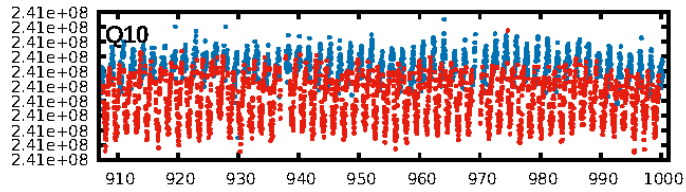
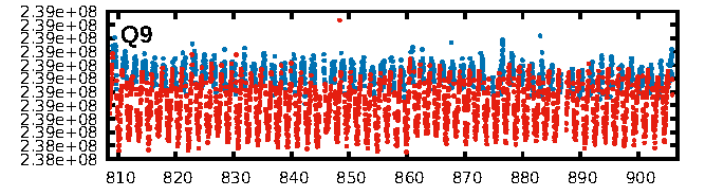
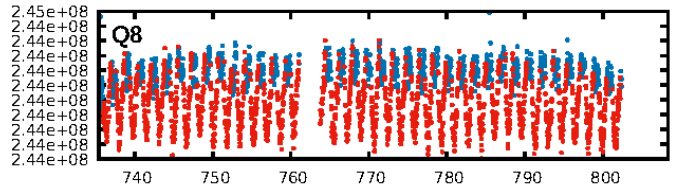
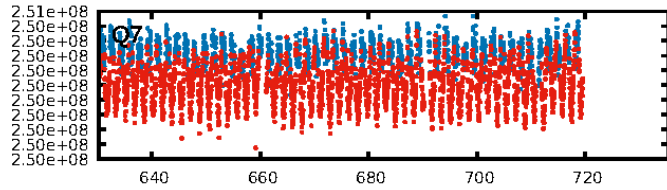
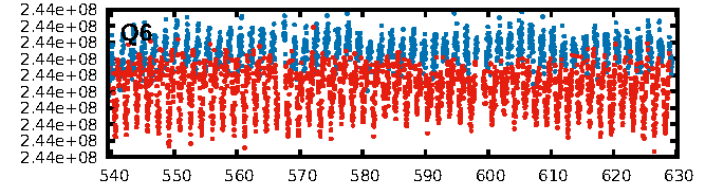
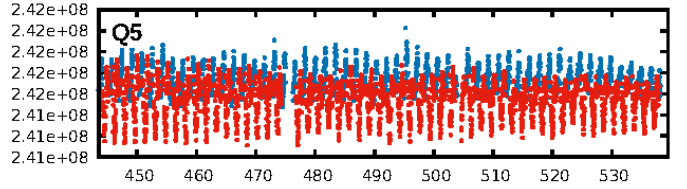
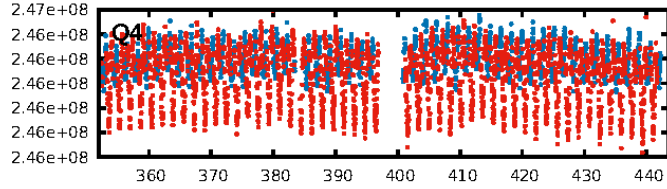
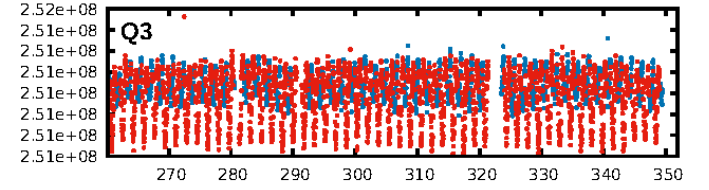
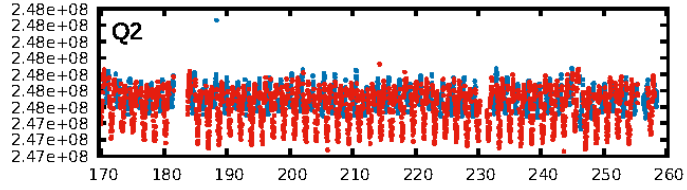
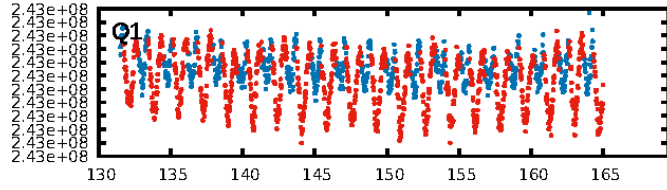
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [26.78σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.77e-03
RollingBand-fgt: 1.00 [757/757]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.125 arcsec [1.24σ]
KicOffset-rm: 0.043 arcsec [0.45σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

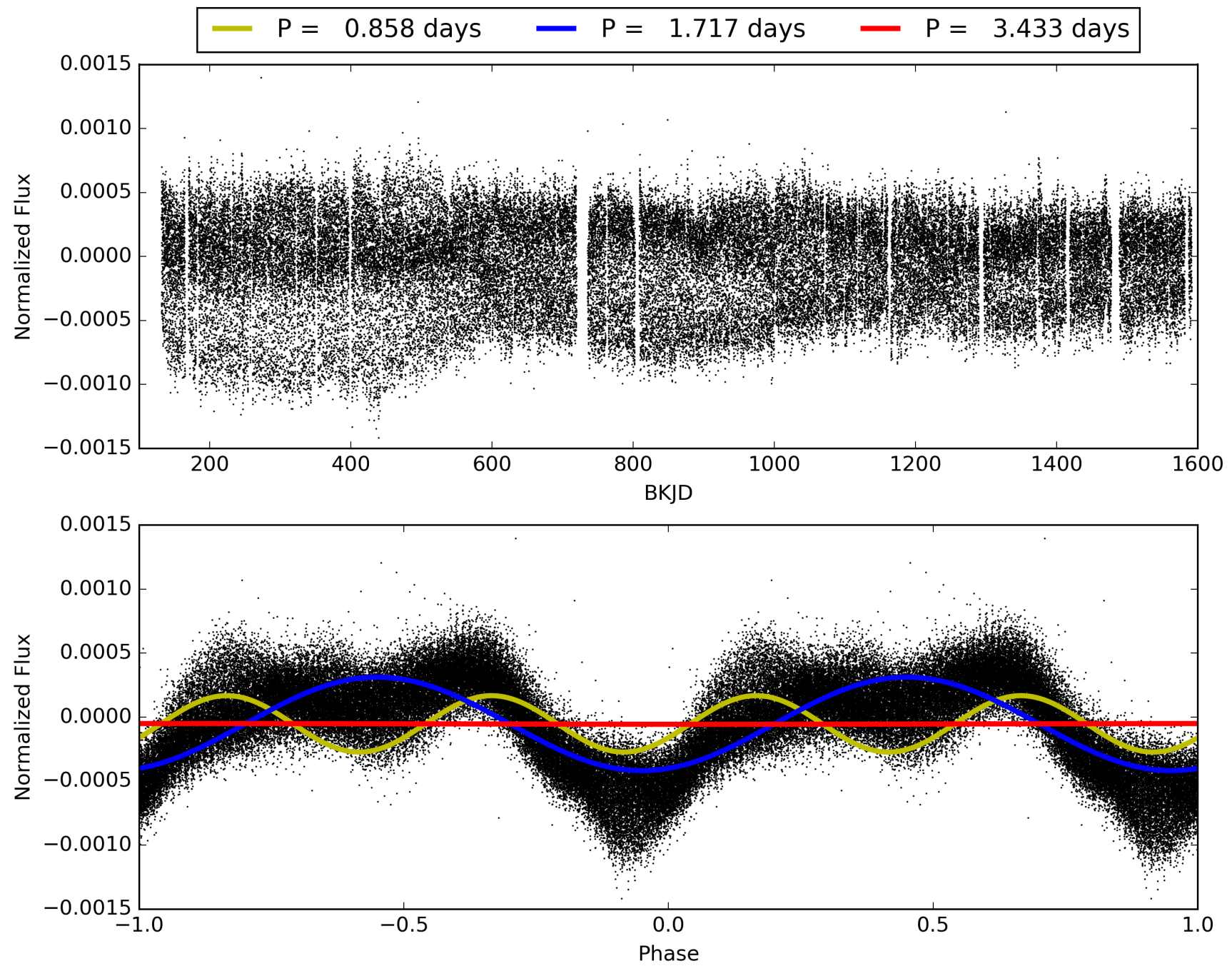
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007841640-01, PDC Light Curves

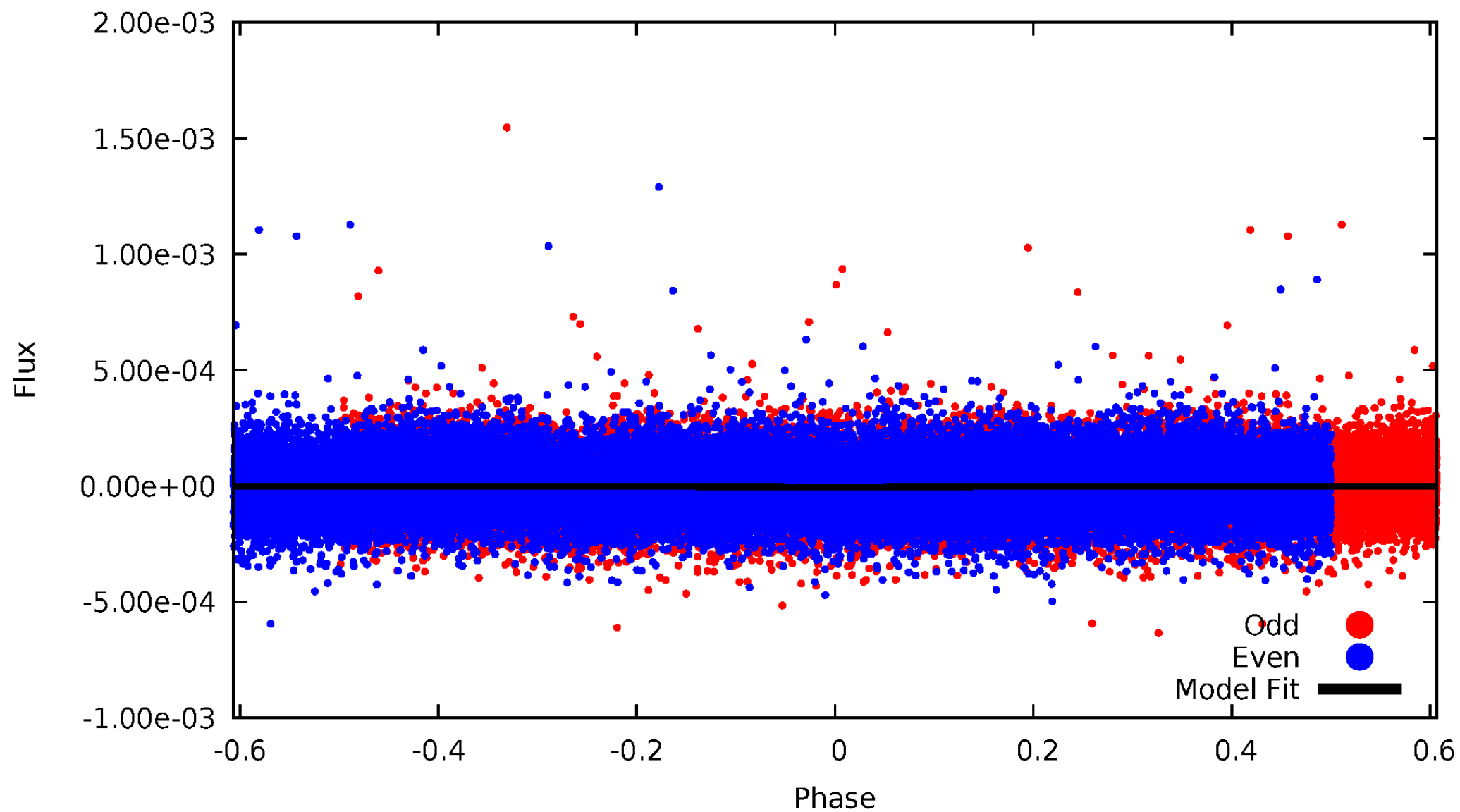


TCE 007841640-01



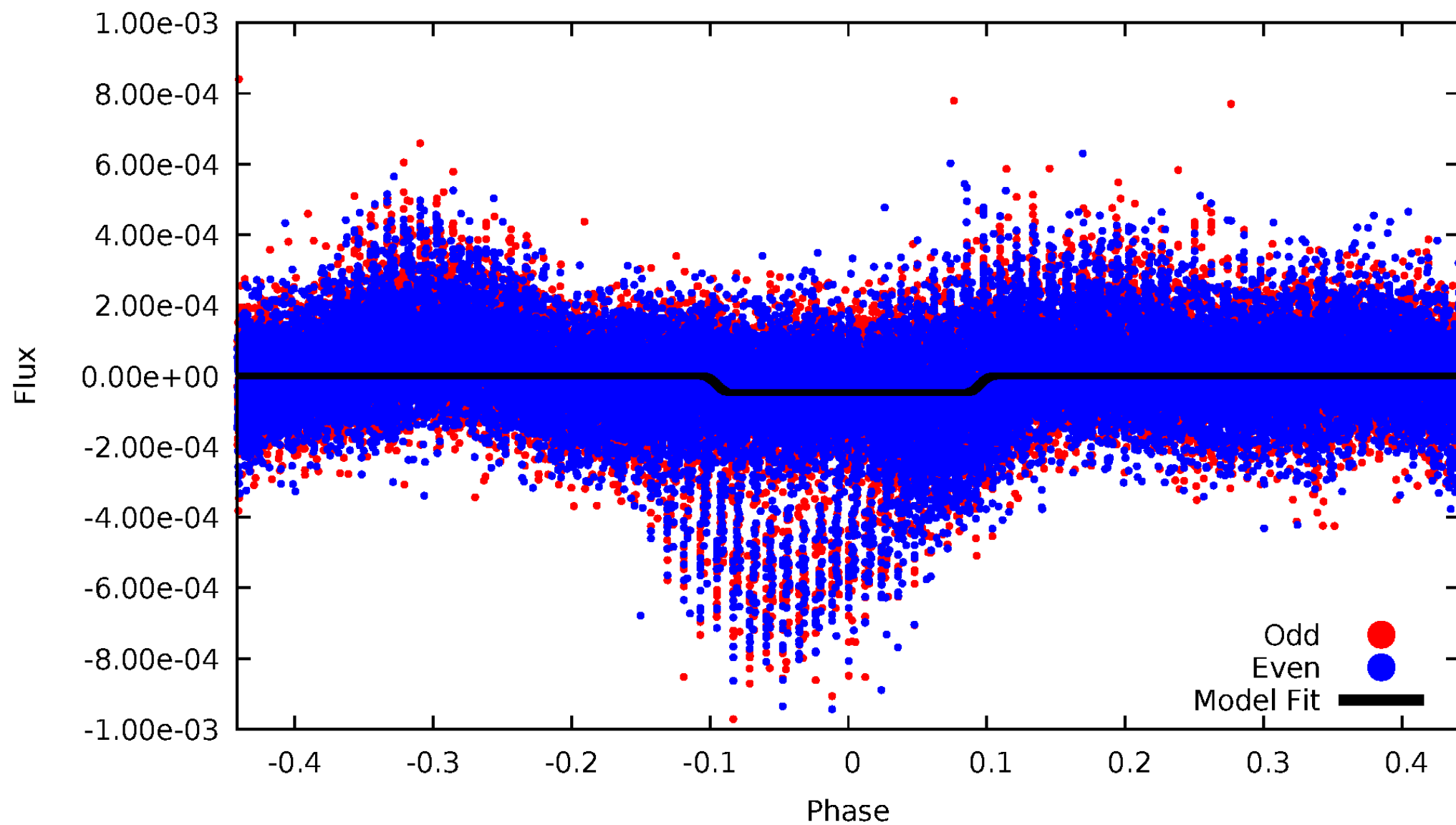
DV Odd/Even

TCE 007841640-01



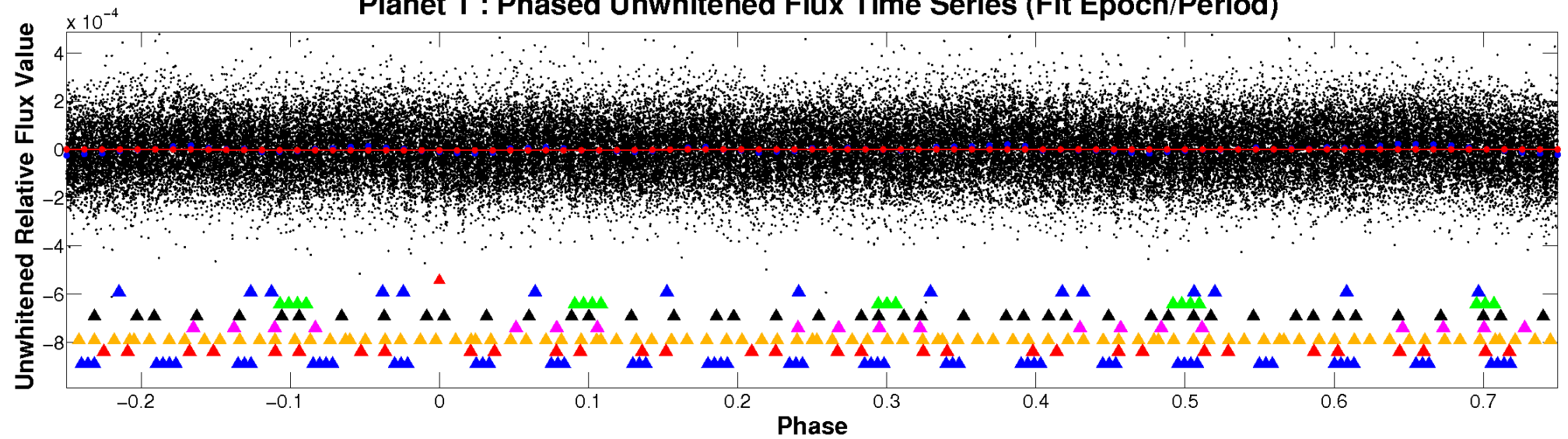
ALT Odd/Even

TCE 007841640-01

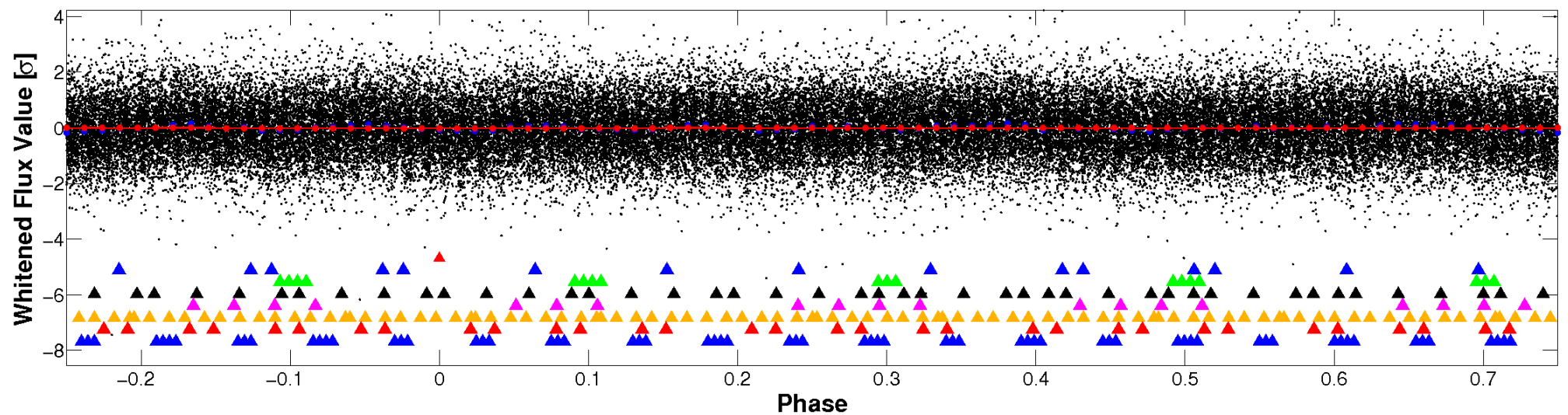


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

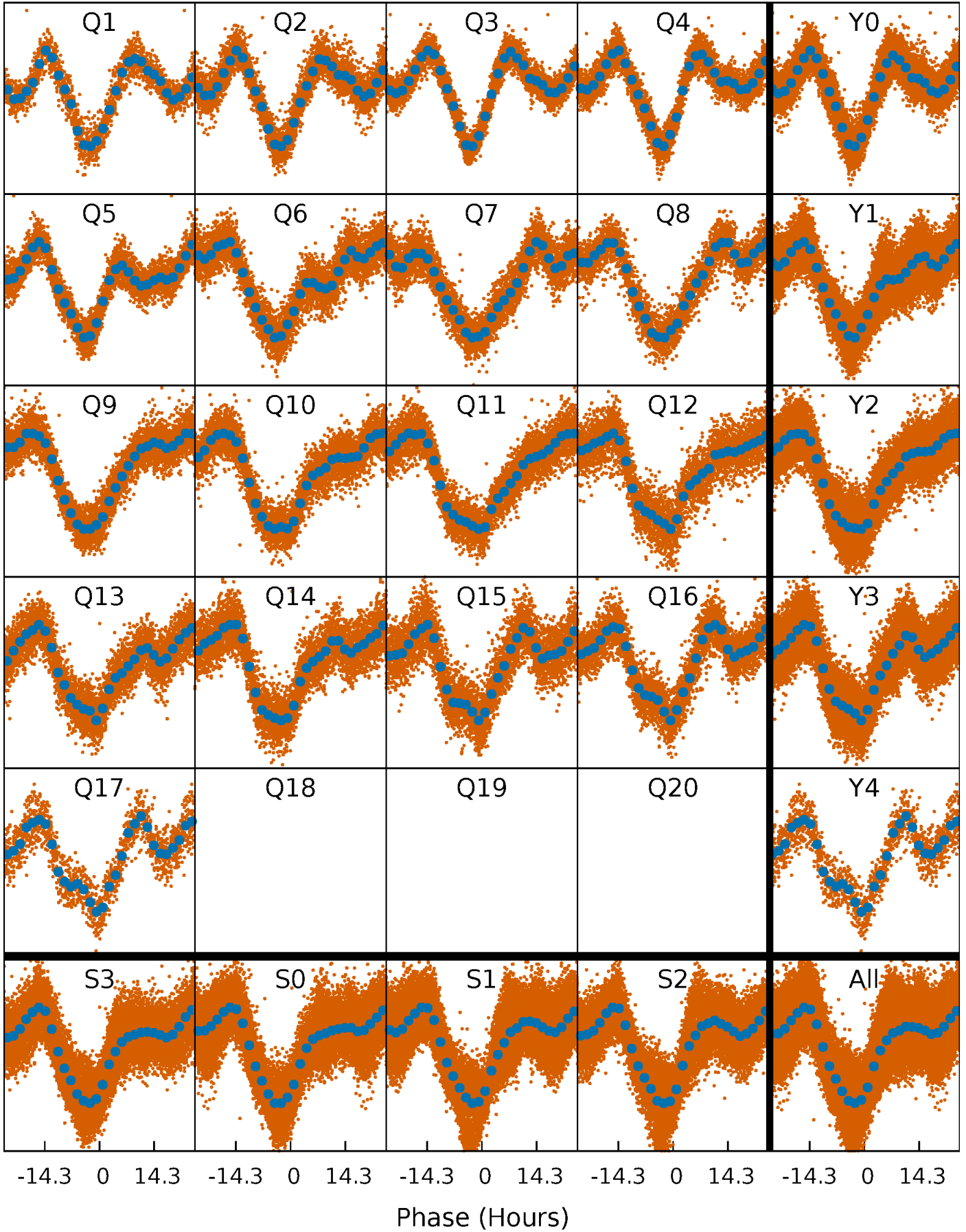


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



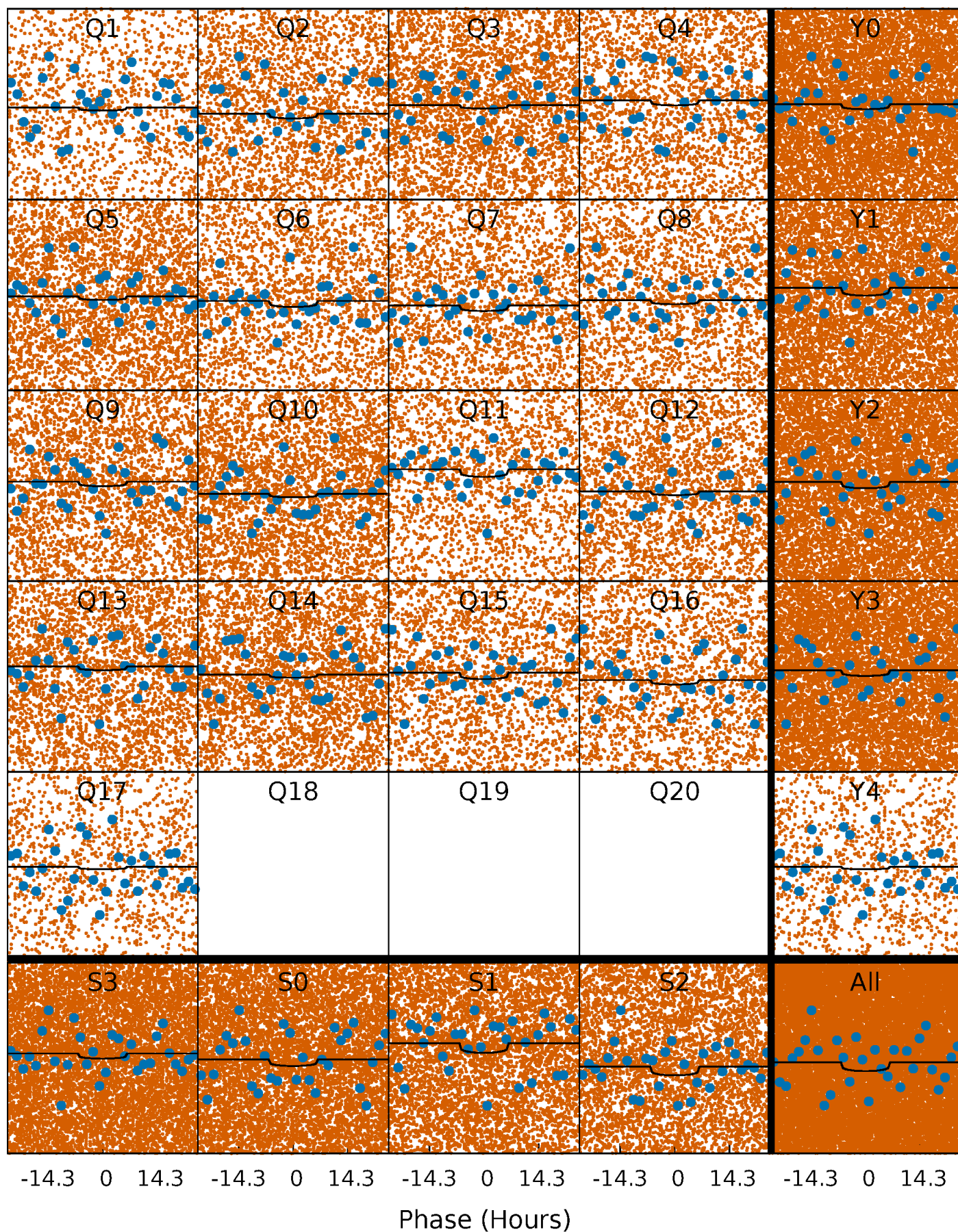
PDC Quarter-Phased Transit Curves

TCE 007841640-01 P= 1.716619 Days $T_0=132.218549$ (BKJD)



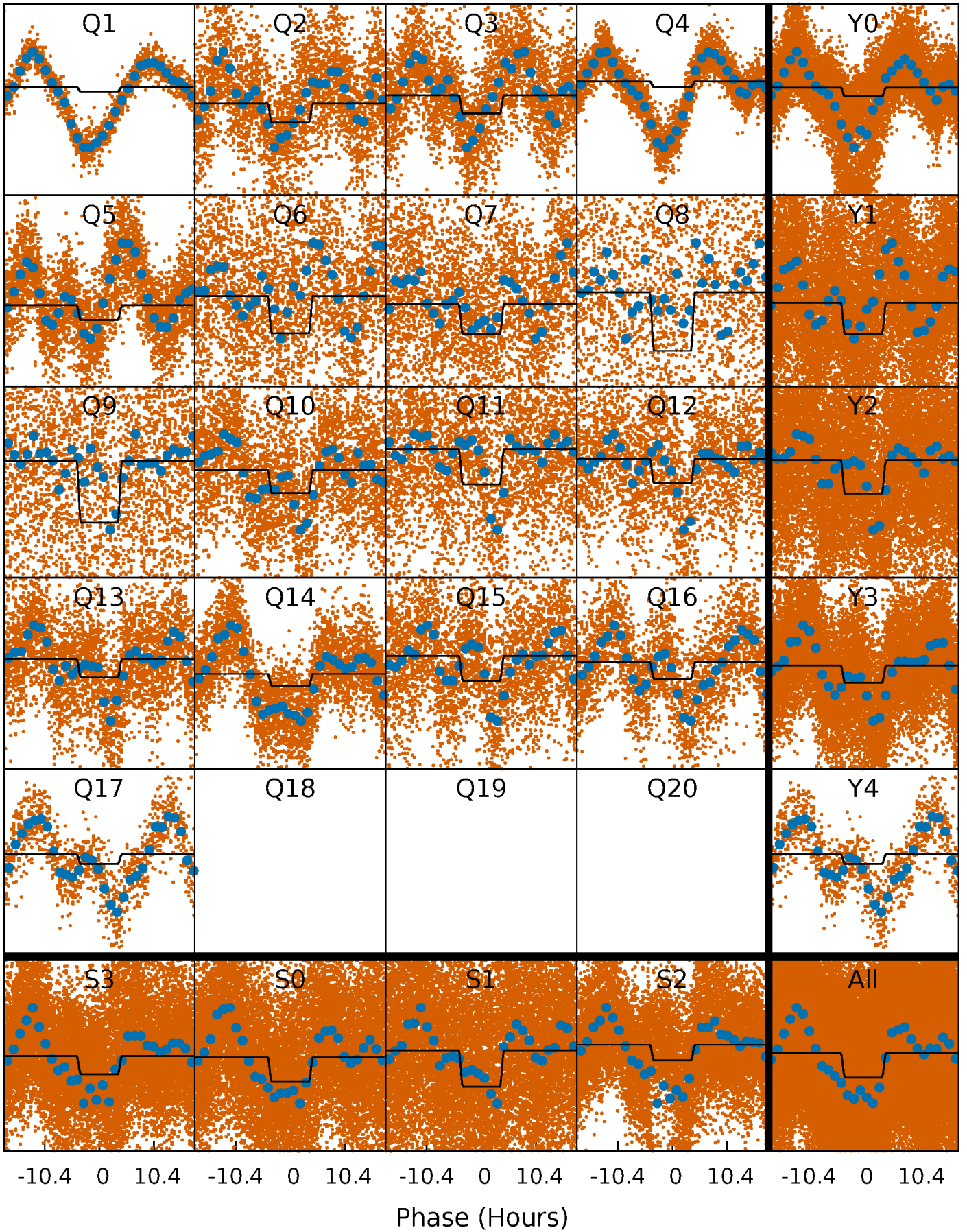
DV Quarter-Phased Transit Curves

TCE 007841640-01 P= 1.716619 Days $T_0=132.218549$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

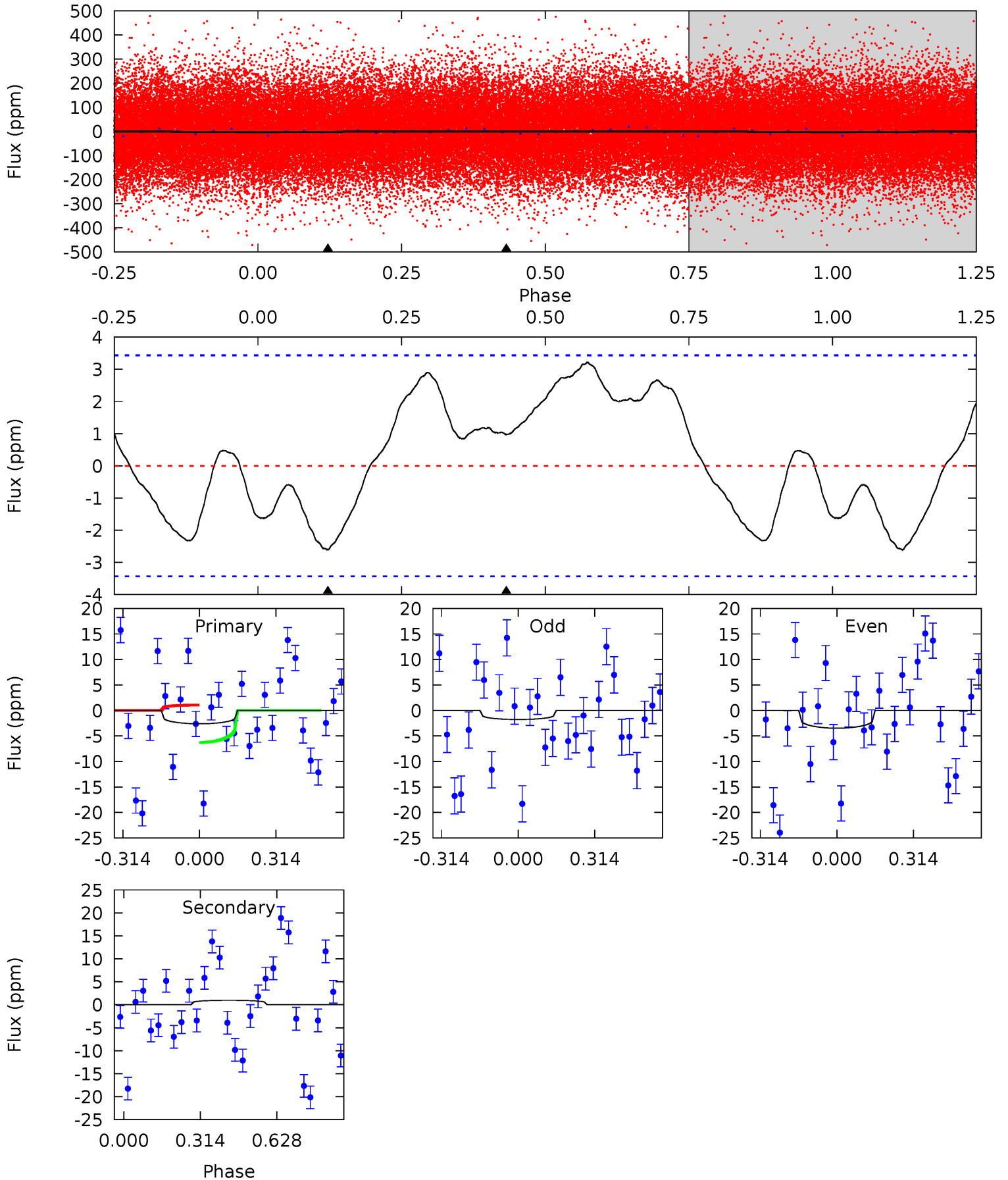
TCE 007841640-01 P= 1.716500 Days $T_0=132.185811$ (BKJD)



DV Model-Shift Uniqueness Test

007841640-01, P = 1.716619 Days, E = 130.501930 Days

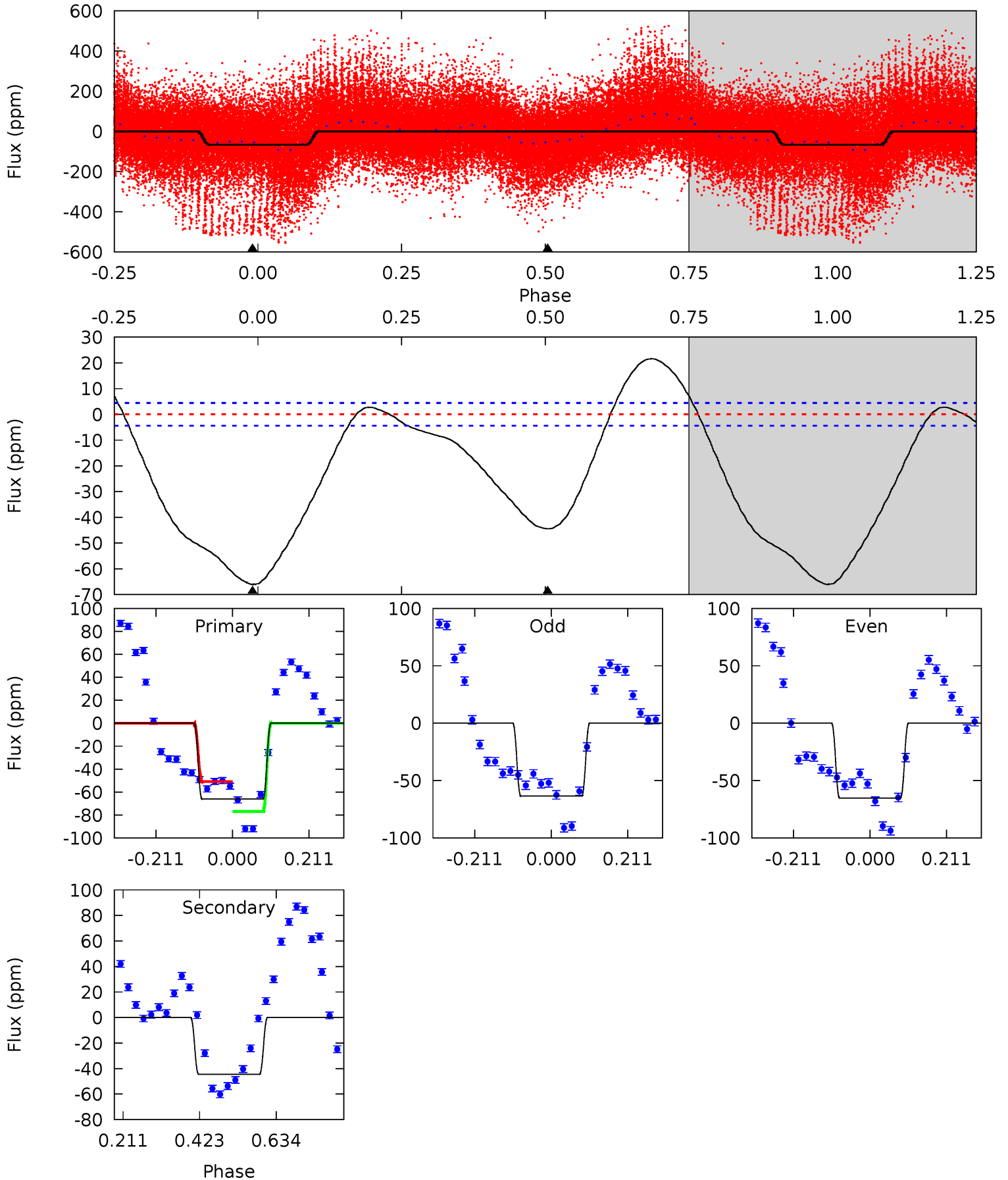
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.29	-1.23	0	0	4.32	1.01	1.28	3.29	3.29	-1.23	-1.23	1.05	-15.0	0.55	3.26



Alt Model-Shift Uniqueness Test

007841640-01, P = 1.716500 Days, E = 130.469311 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
66.3	44.5	0	0	4.41	1.25	7.10	66.3	66.3	44.5	44.5	0.84	1.68	0.25	13.4



Stellar Parameters For KIC 007841640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6886^{+163}_{-245}	$3.789^{+0.292}_{-0.097}$	$-0.080^{+0.250}_{-0.300}$	$2.775^{+0.428}_{-0.998}$	$1.726^{+0.163}_{-0.353}$	$0.114^{+0.237}_{-0.036}$
	+2%/-4%	+8%/-3%	+312%/-375%	+15%/-36%	+9%/-20%	+208%/-32%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007841640-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	1 ± 1	$0.64^{+0.54}_{-0.43}$	3766^{+226}_{-351}	-4667^{+1001}_{-2519}	$-1.152^{+1.073}_{-9.271}$
Alt.	-44 ± 1	$1.96^{+0.63}_{-0.66}$	3794^{+222}_{-328}	6687^{+1618}_{-895}	$7.172^{+9.095}_{-3.104}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

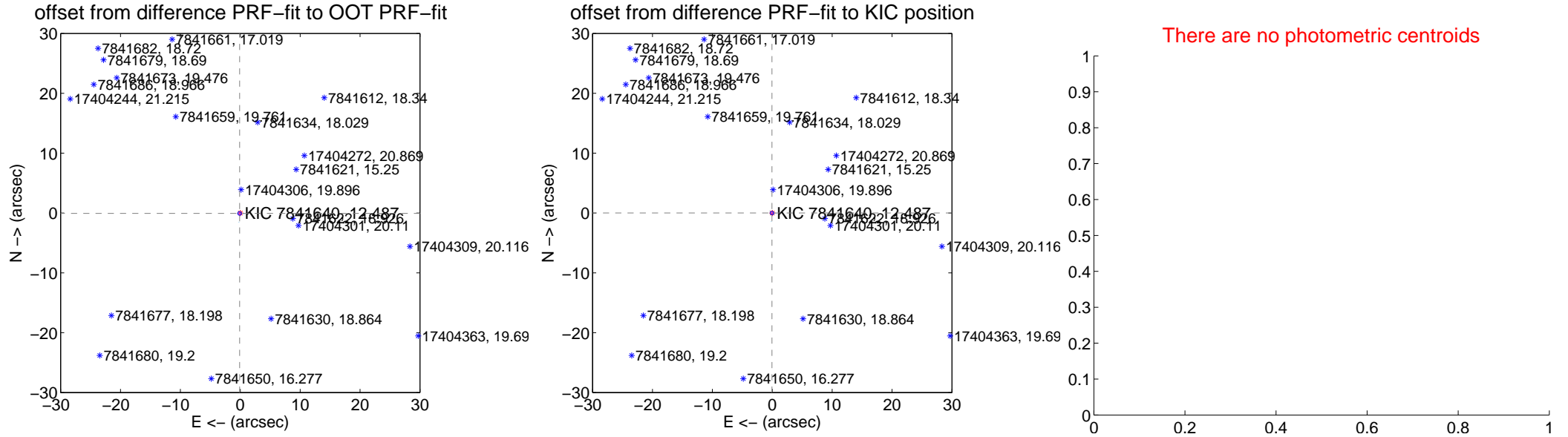
DV Centroid Data

Supplemental centroid analysis for 007841640-01. Kepler magnitude: 12.49. Transit SNR 2.21

There are 17 quarters with good PRF difference image offsets

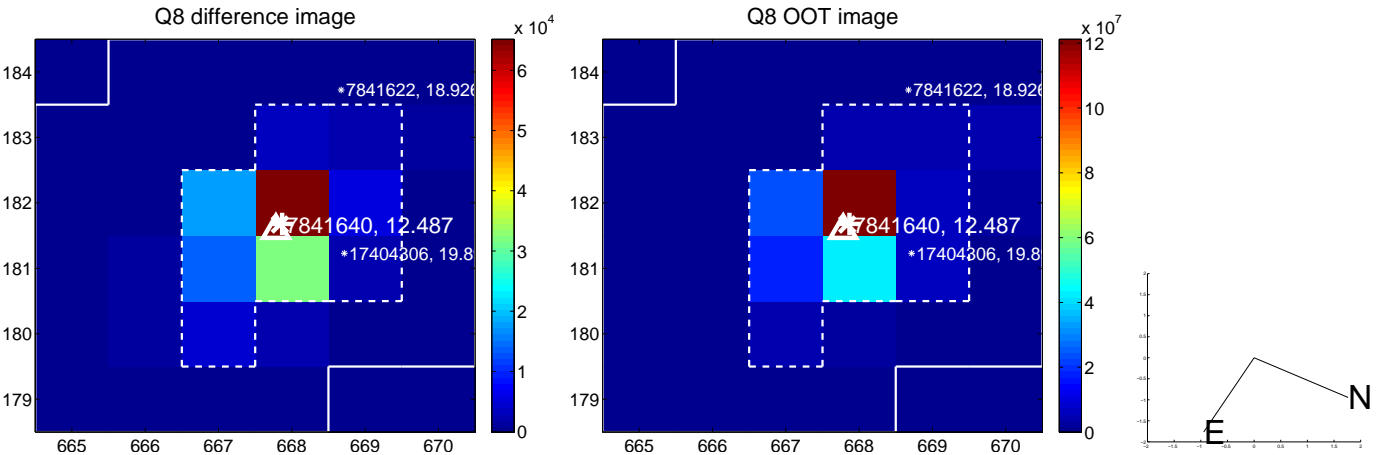
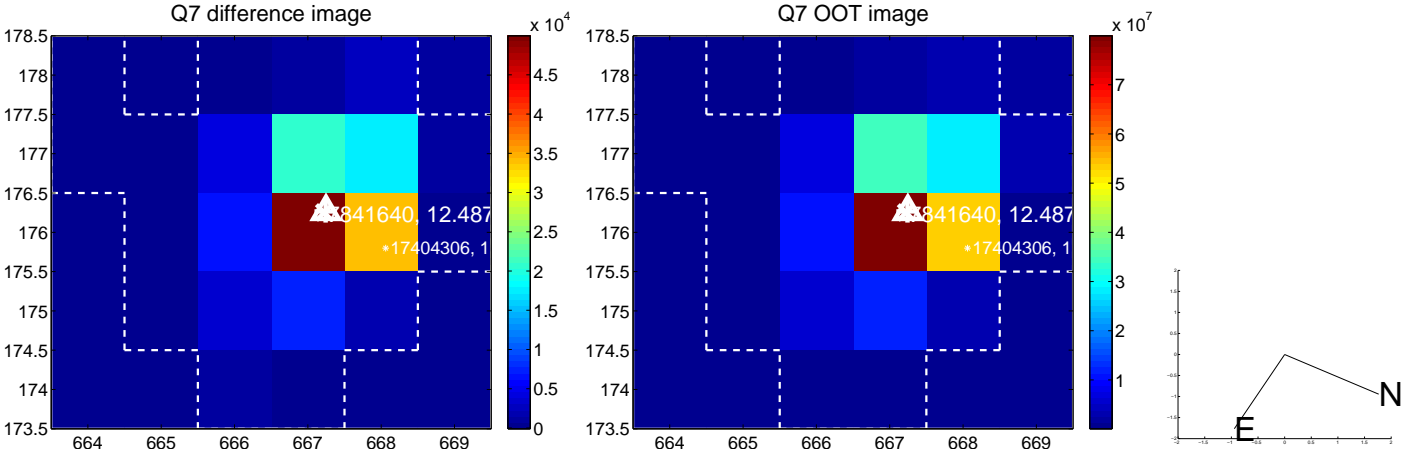
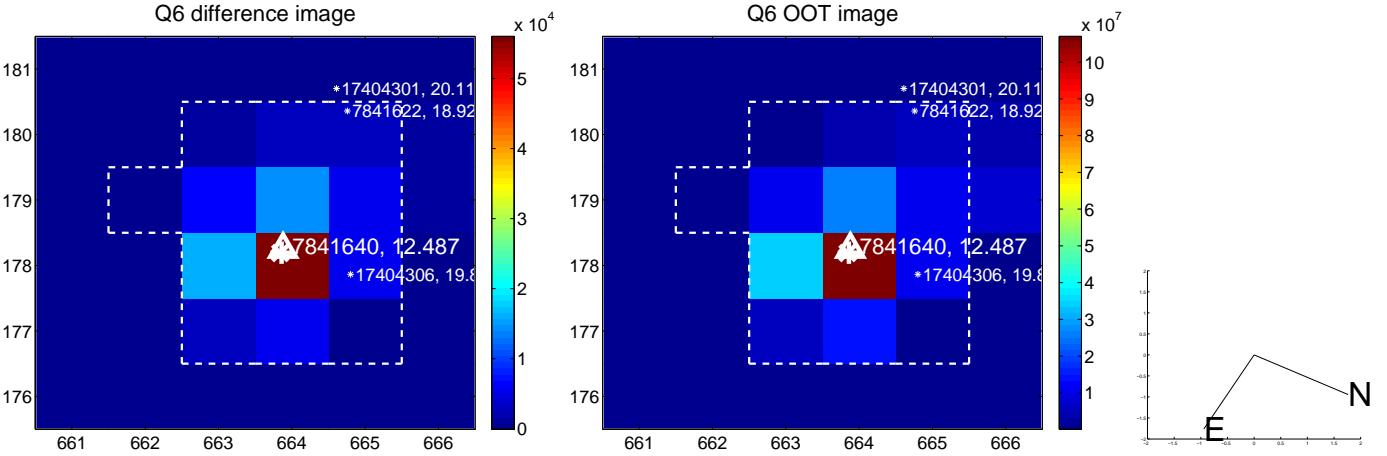
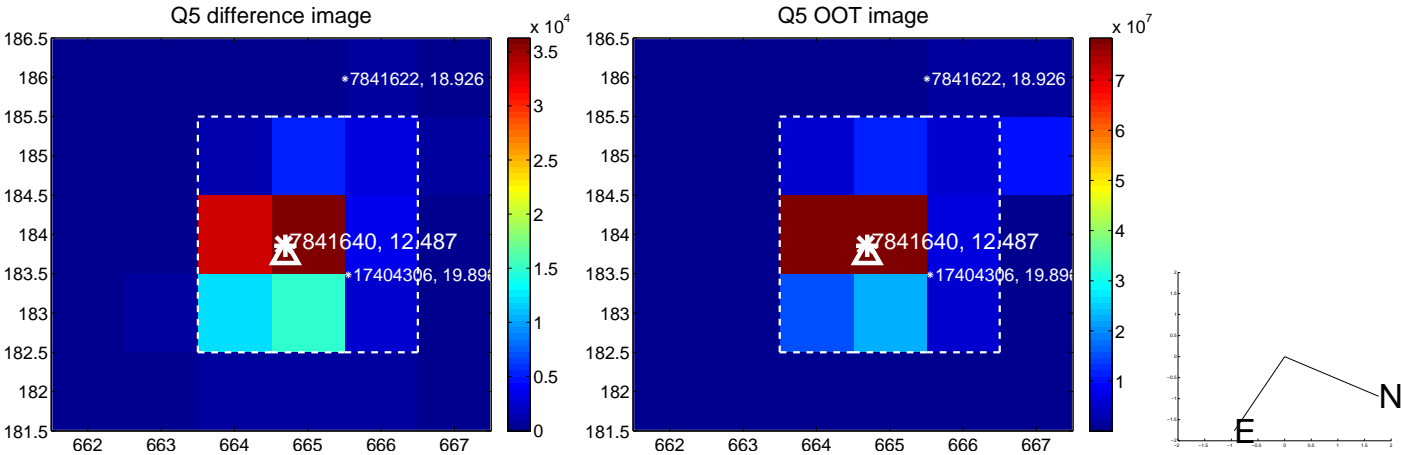
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.125 ± 0.101	1.24	0.104 ± 0.094	-0.069 ± 0.112
PRF-fit source offset from KIC position	0.043 ± 0.096	0.45	0.043 ± 0.096	0.000 ± 0.072
photometric centroid source offset	—	—	—	—

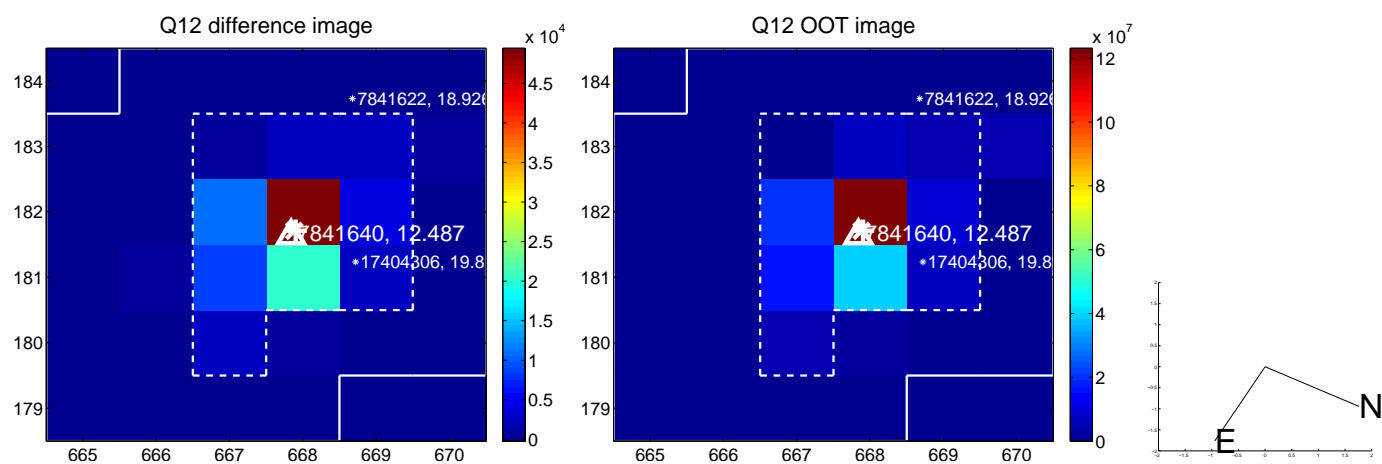
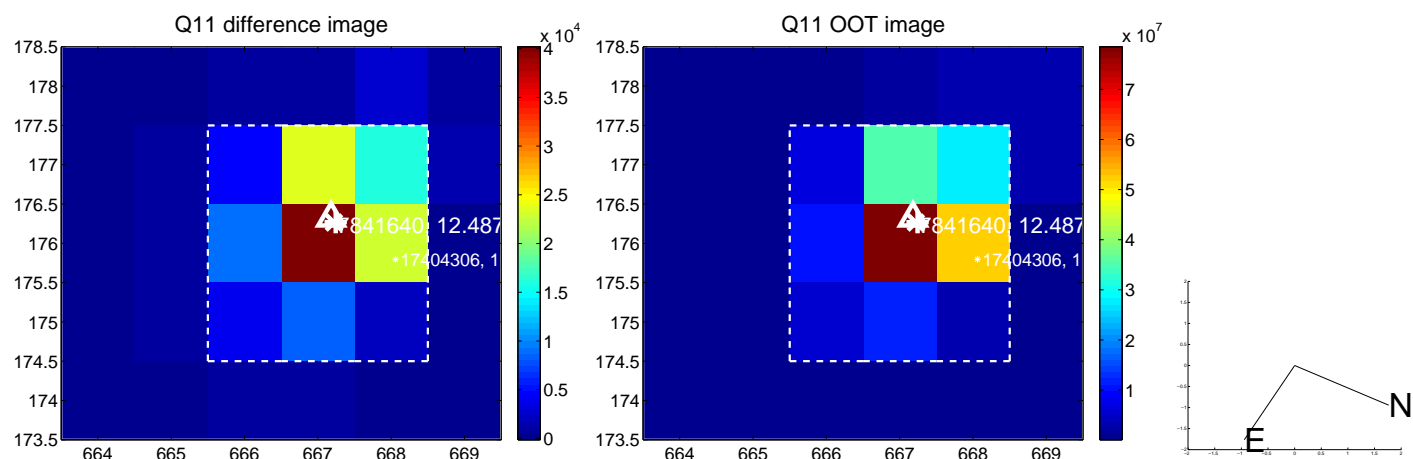
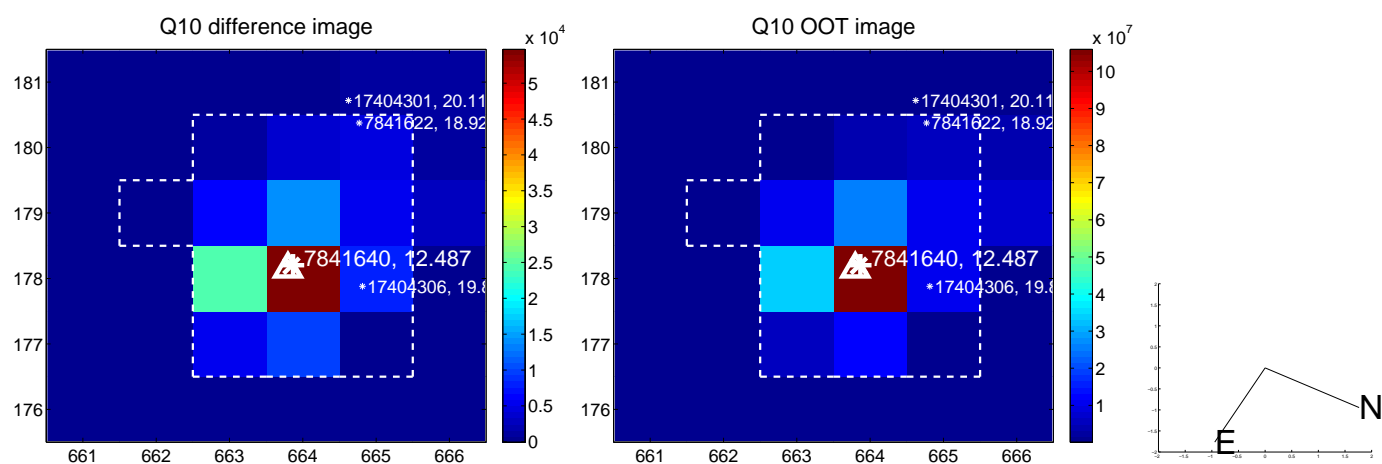
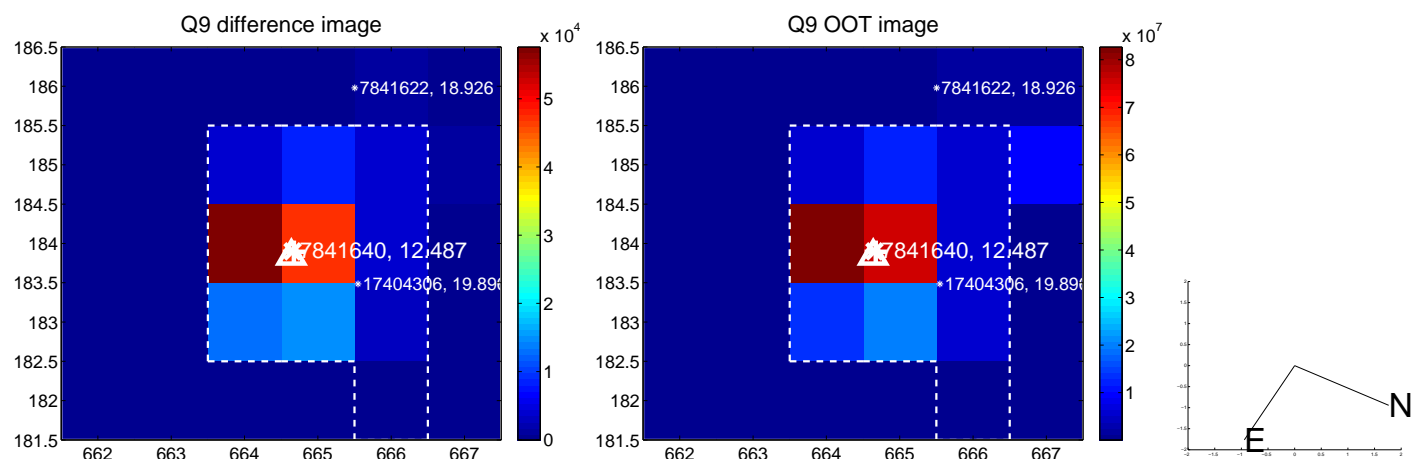


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

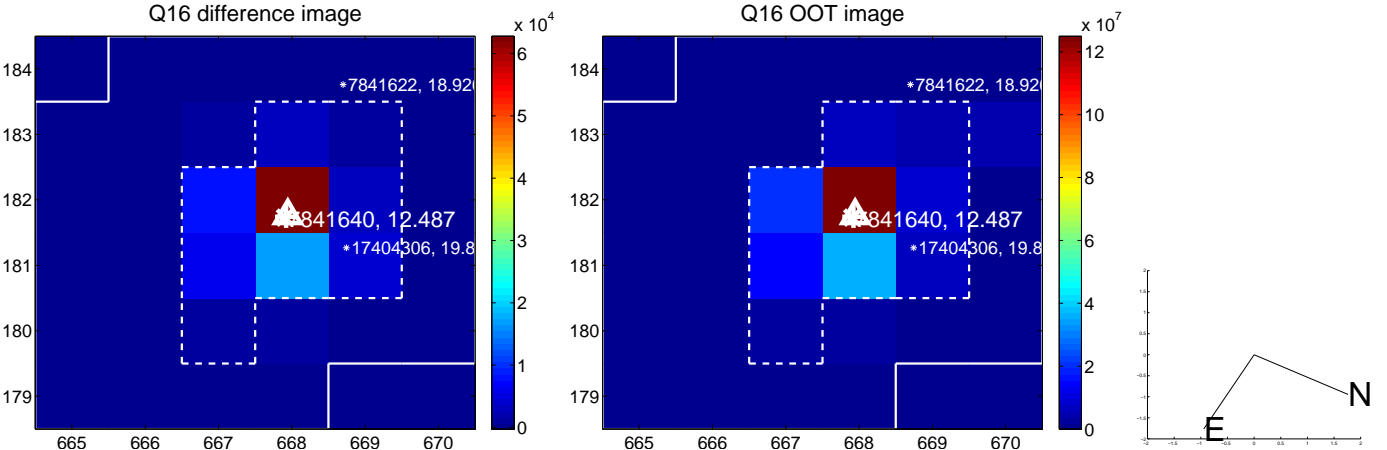
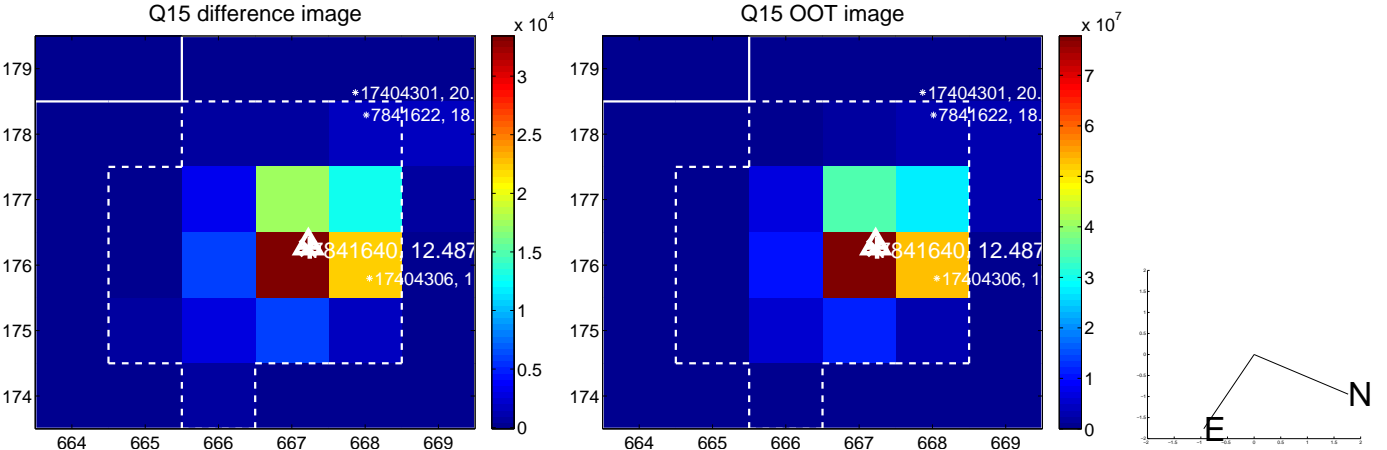
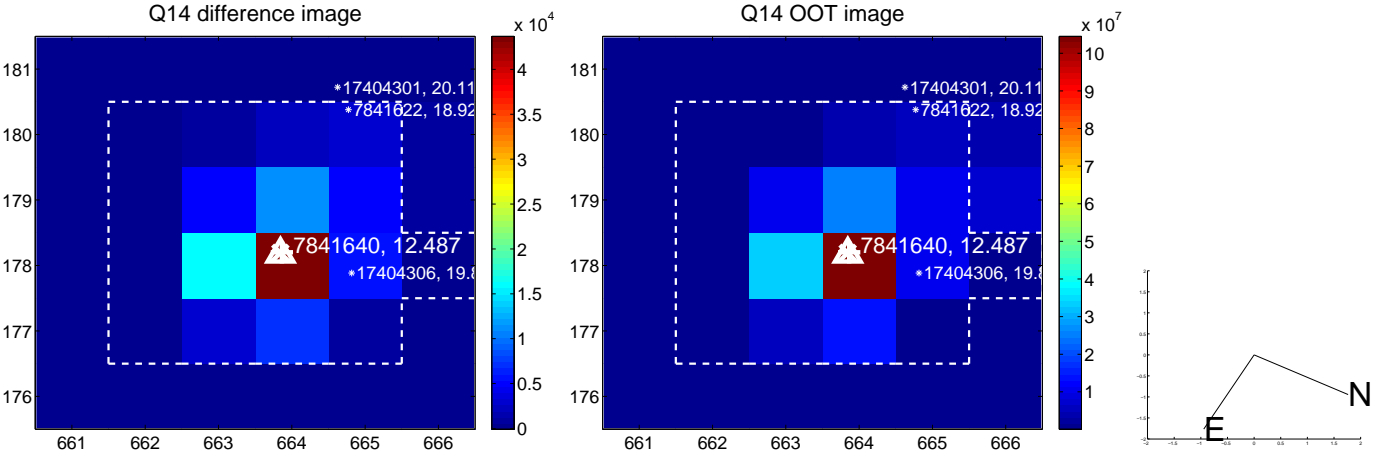
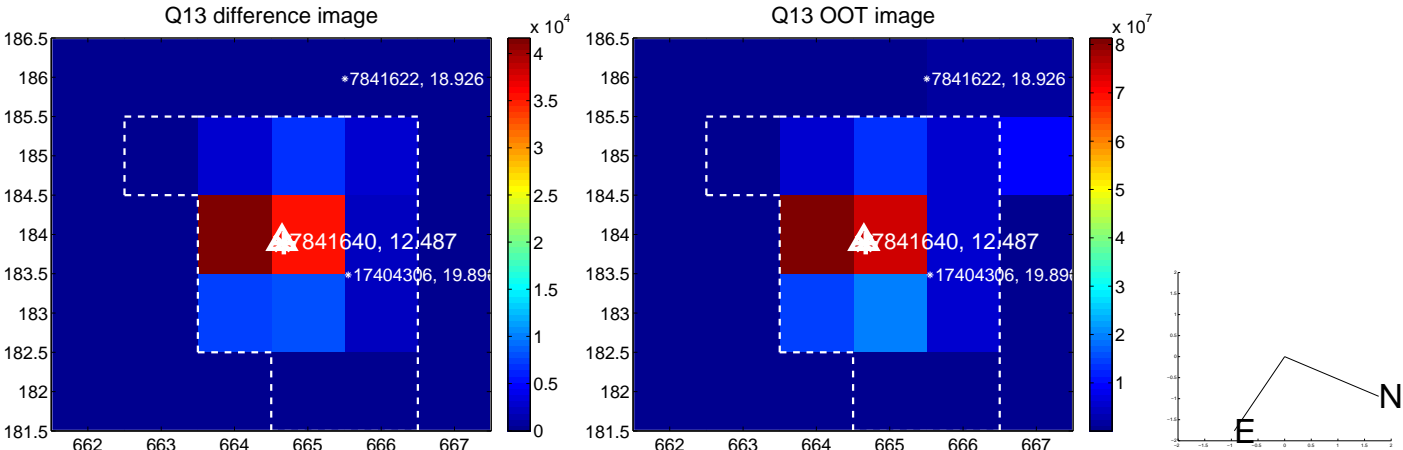
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



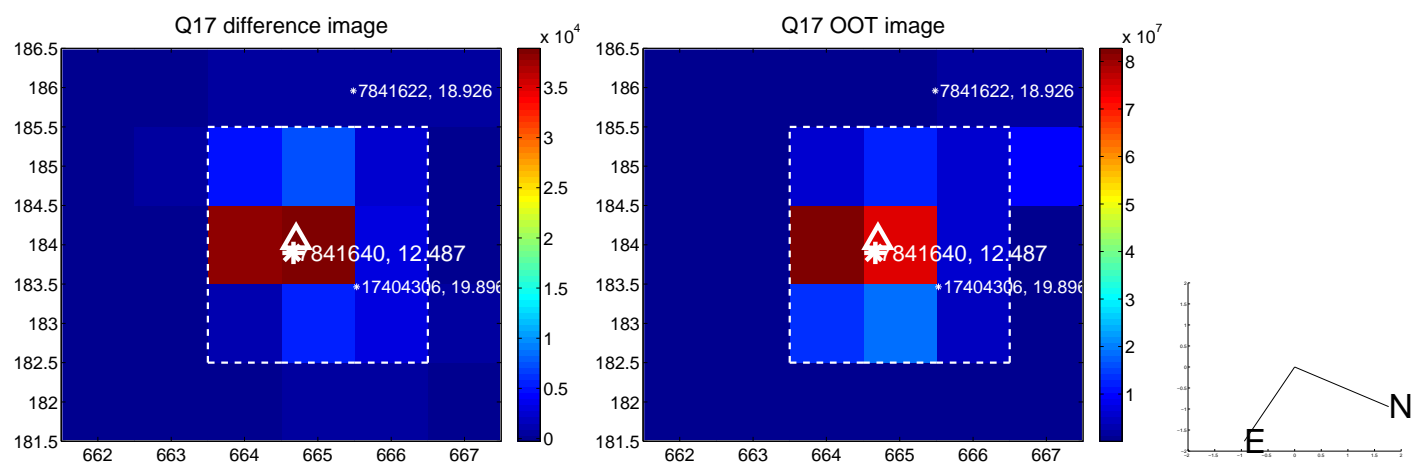
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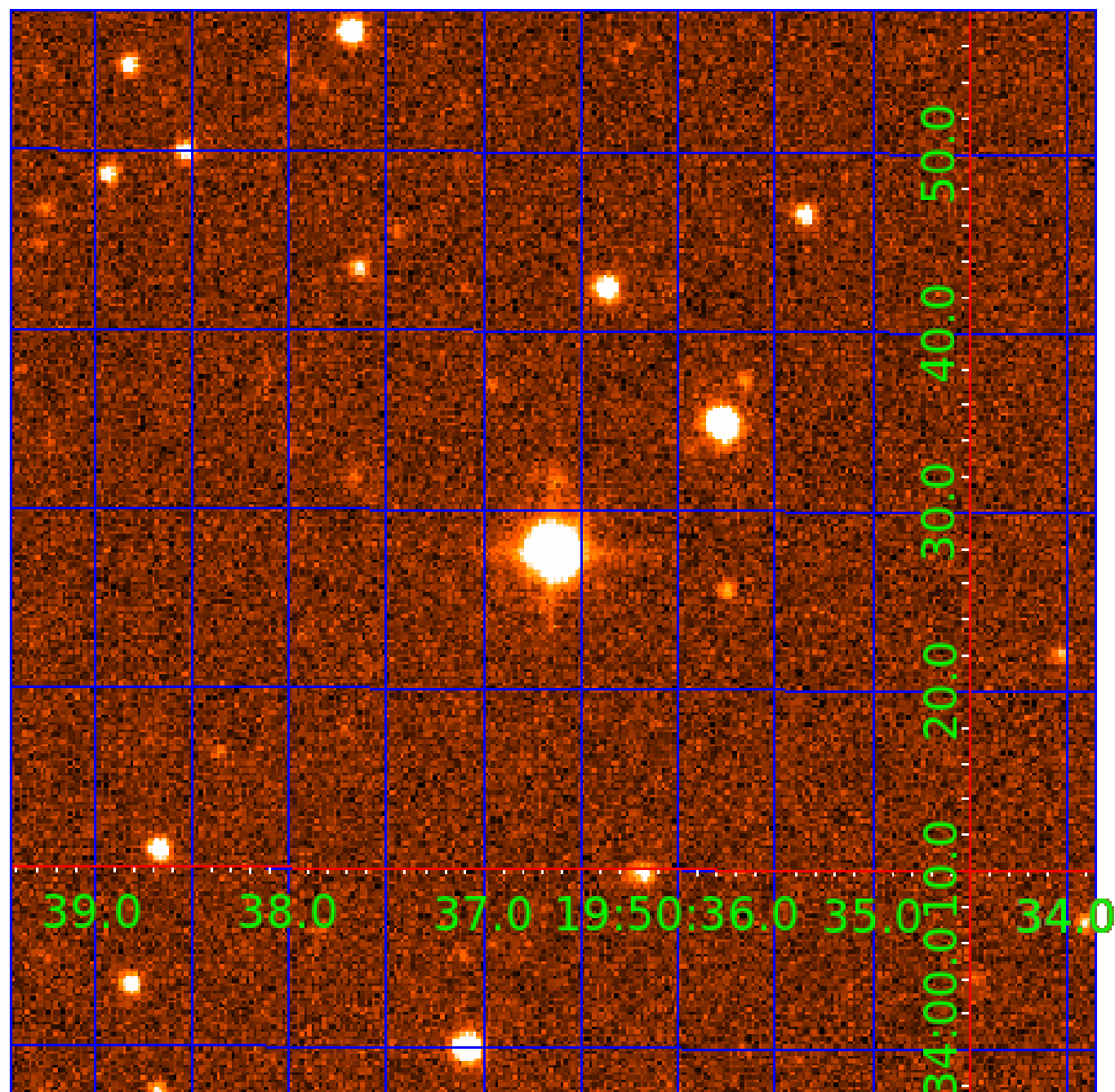


folded centroid time series figure for this object.



UKIRT Image

Declination



KIC 007841640

Q1-17 DR25 TCE Parameters

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007841640-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
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007841640-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

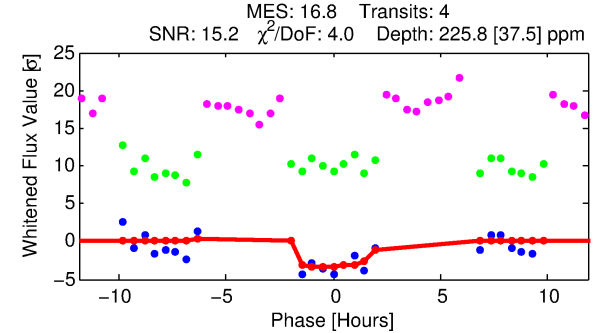
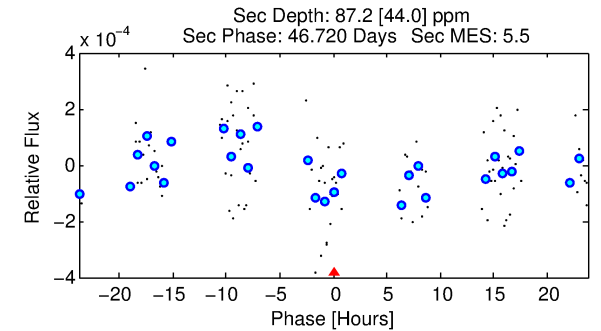
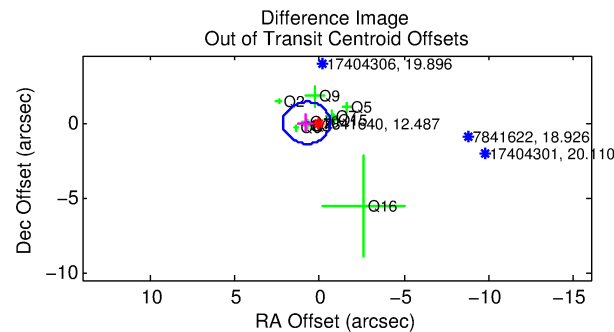
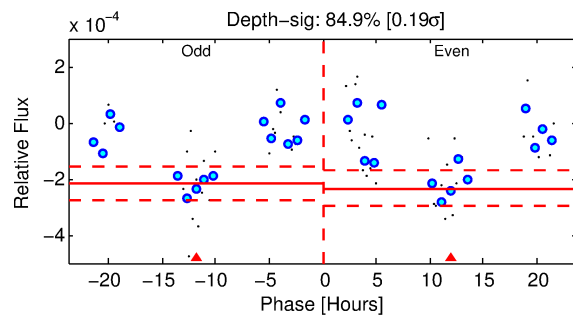
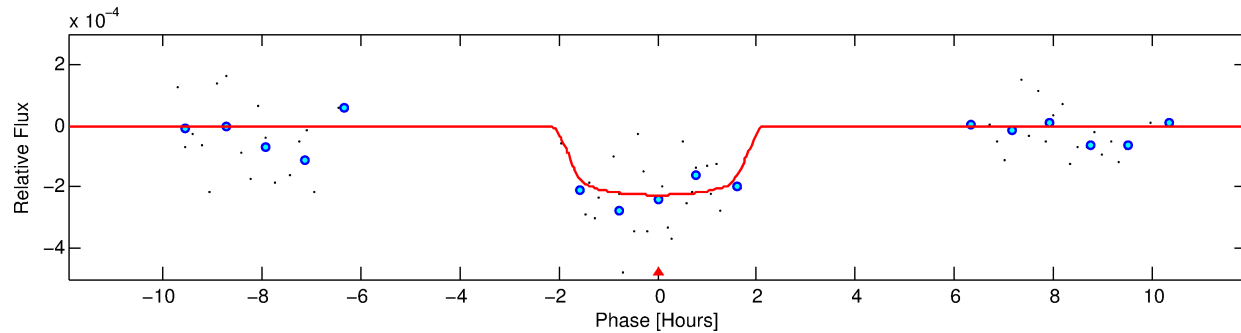
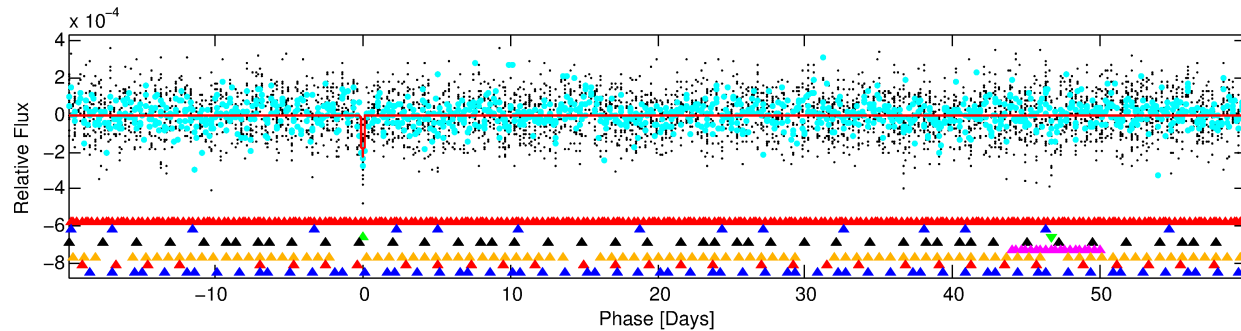
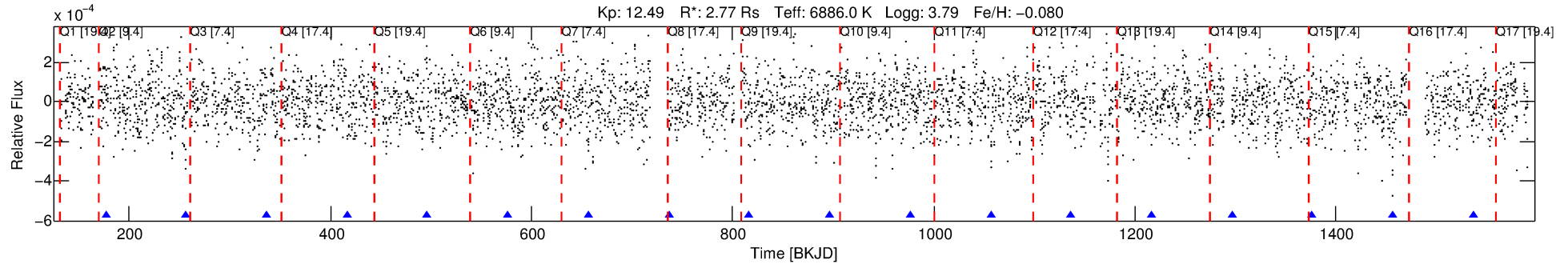
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007841640-03

No Significant Match Found

DV One-Page Summary

KIC: 7841640 Candidate: 3 of 8 Period: 79.992 d



DV Fit Results:

Period = 79.99243 [0.00369] d
Epoch = 176.6974 [0.0347] BKJD
Rp/R* = 0.0160 [0.0191]
a/R* = 72.66 [534.55]
b = 0.90 [1.55]
Seff = 81.57 [43.06]
Teq = 766 [101] K
Rp = 4.85 [6.05] Re
a = 0.4361 [0.1431] AU
Ag = 387.76 [966.84] [0.40 σ]
Teffp = 5258 [3214] K [1.40 σ]

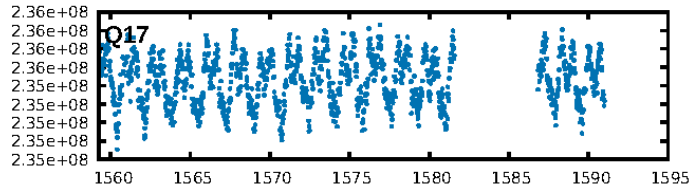
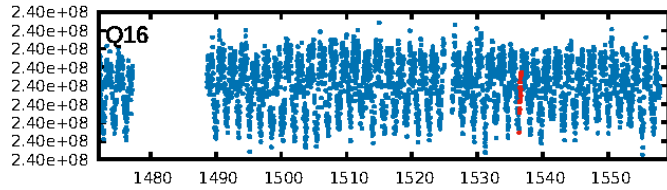
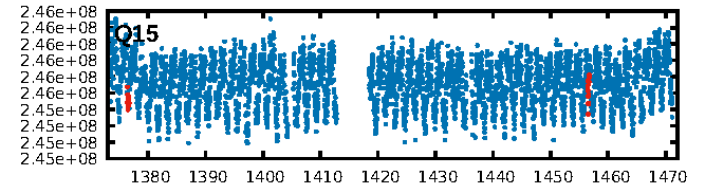
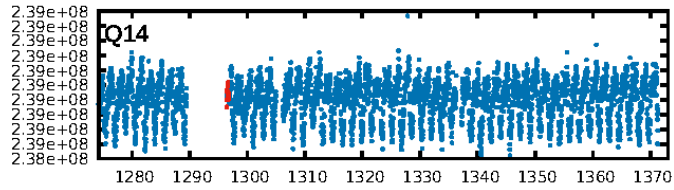
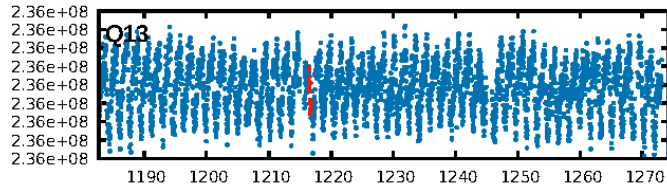
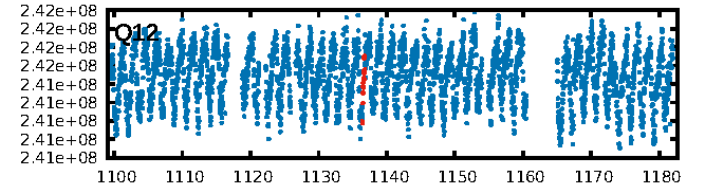
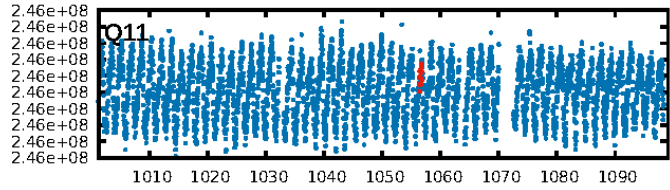
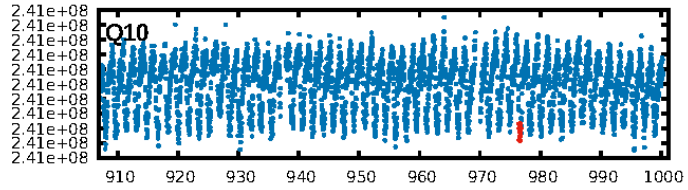
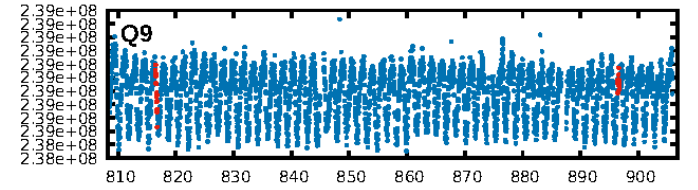
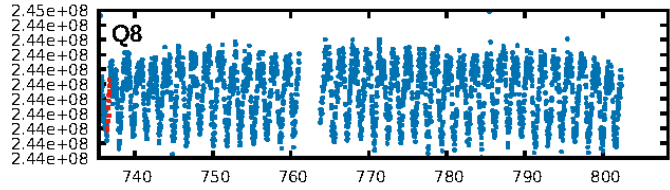
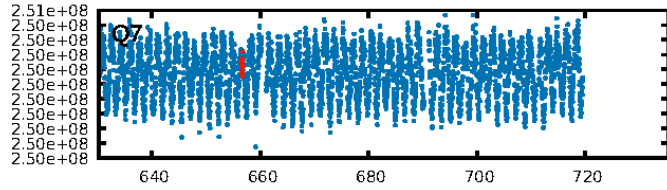
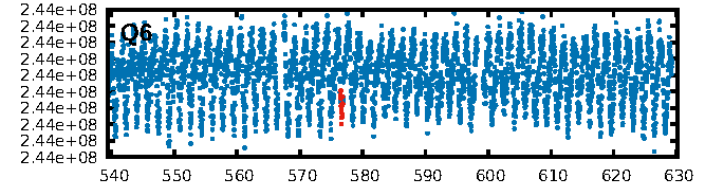
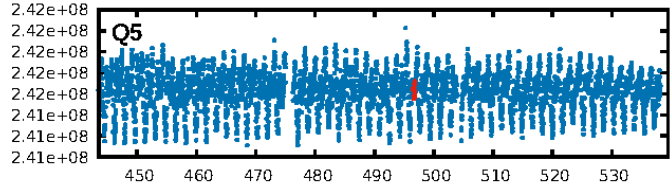
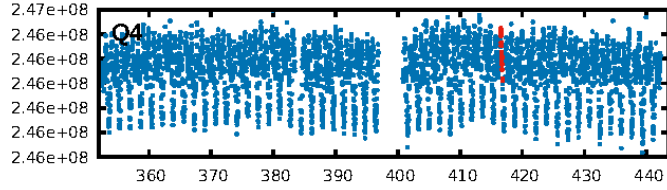
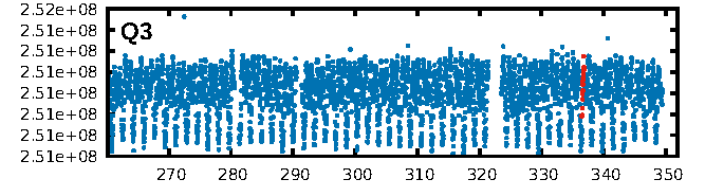
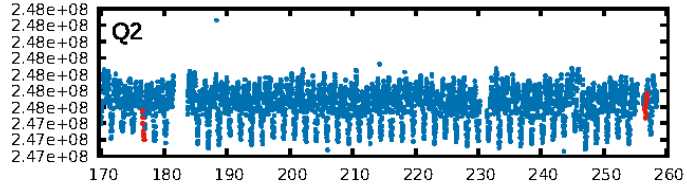
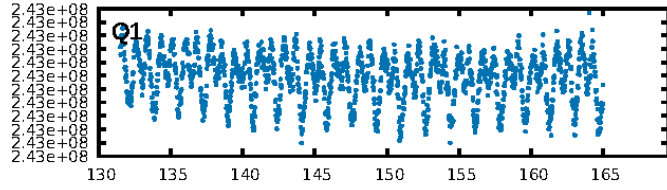
DV Diagnostic Results:

ShortPeriod-sig: 87.8% [1.55 σ]
LongPeriod-sig: 100.0% [92.02 σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 0.3%
Bootstrap-pfa: 1.57e-25
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.1925
Centroid-sig: N/A
Centroid-so: 0.304 arcsec [0.64 σ]
OotOffset-rm: 0.765 arcsec [1.65 σ]
OotOffset-st: 3/3/2/2 [10]
KicOffset-rm: 0.697 arcsec [1.40 σ]
KicOffset-st: 3/3/2/2 [10]
DiffImageQuality-fgm: 0.60 [6/10]
DiffImageOverlap-fno: 0.33 [4/12]

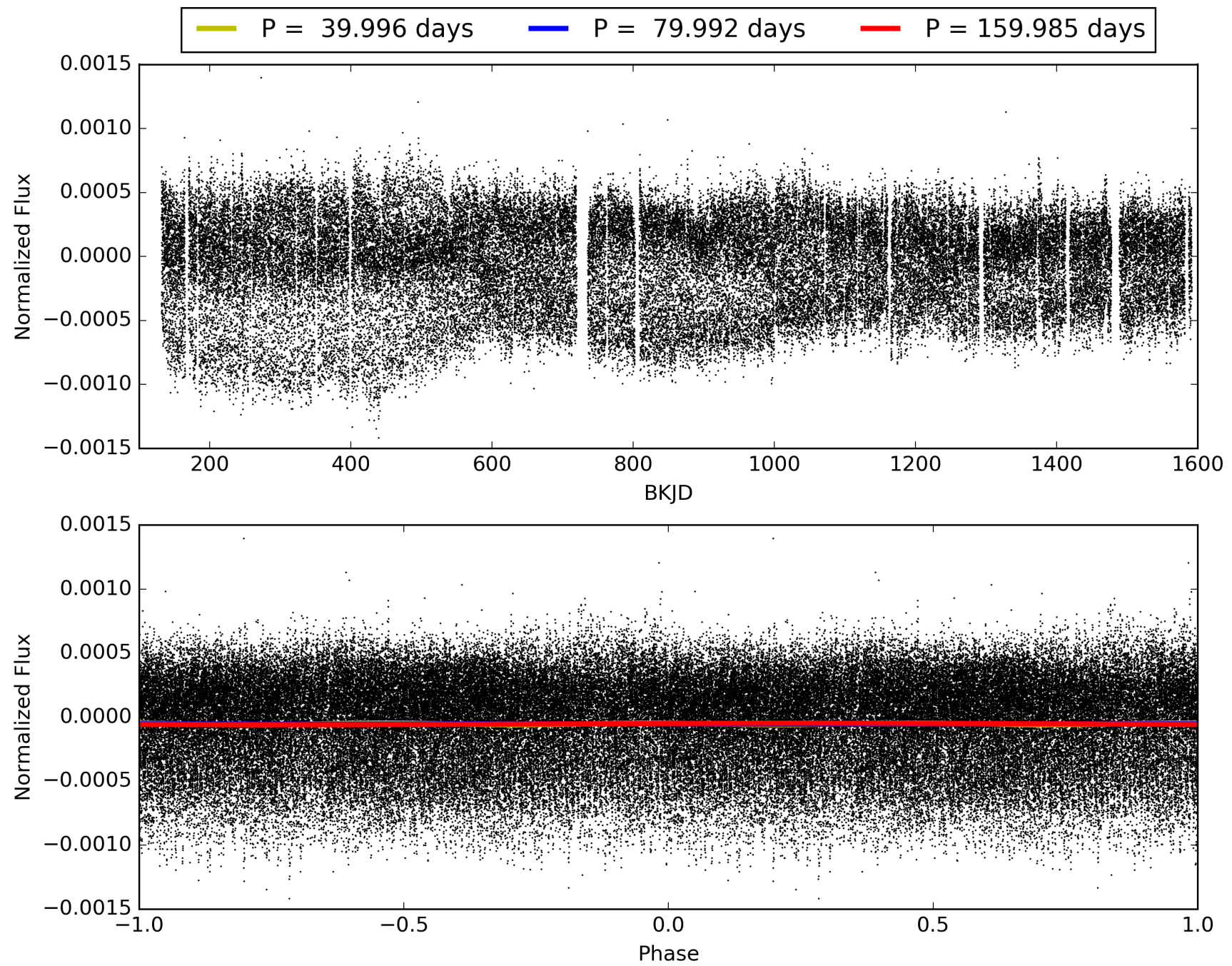
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:36 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007841640-03, PDC Light Curves

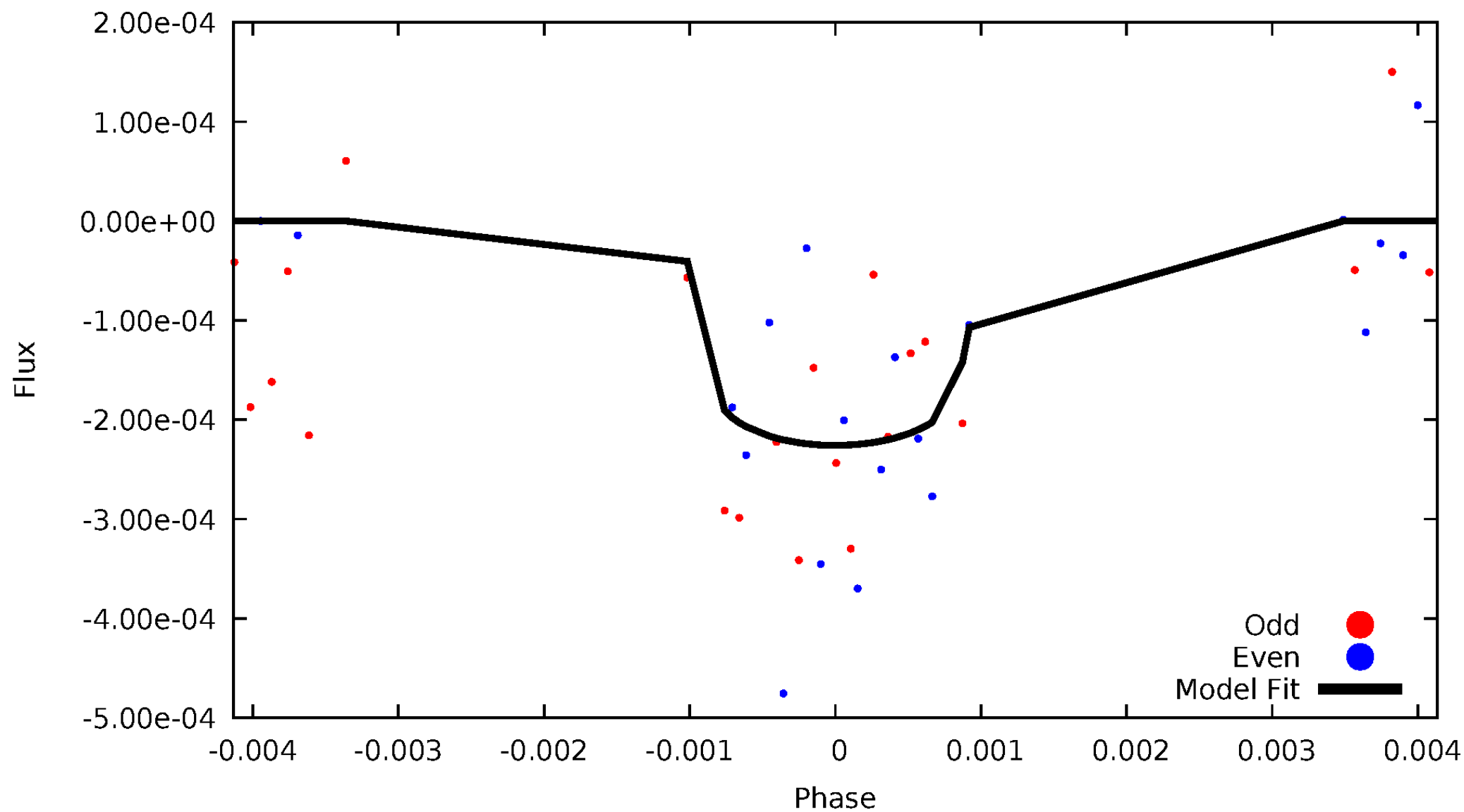


TCE 007841640-03



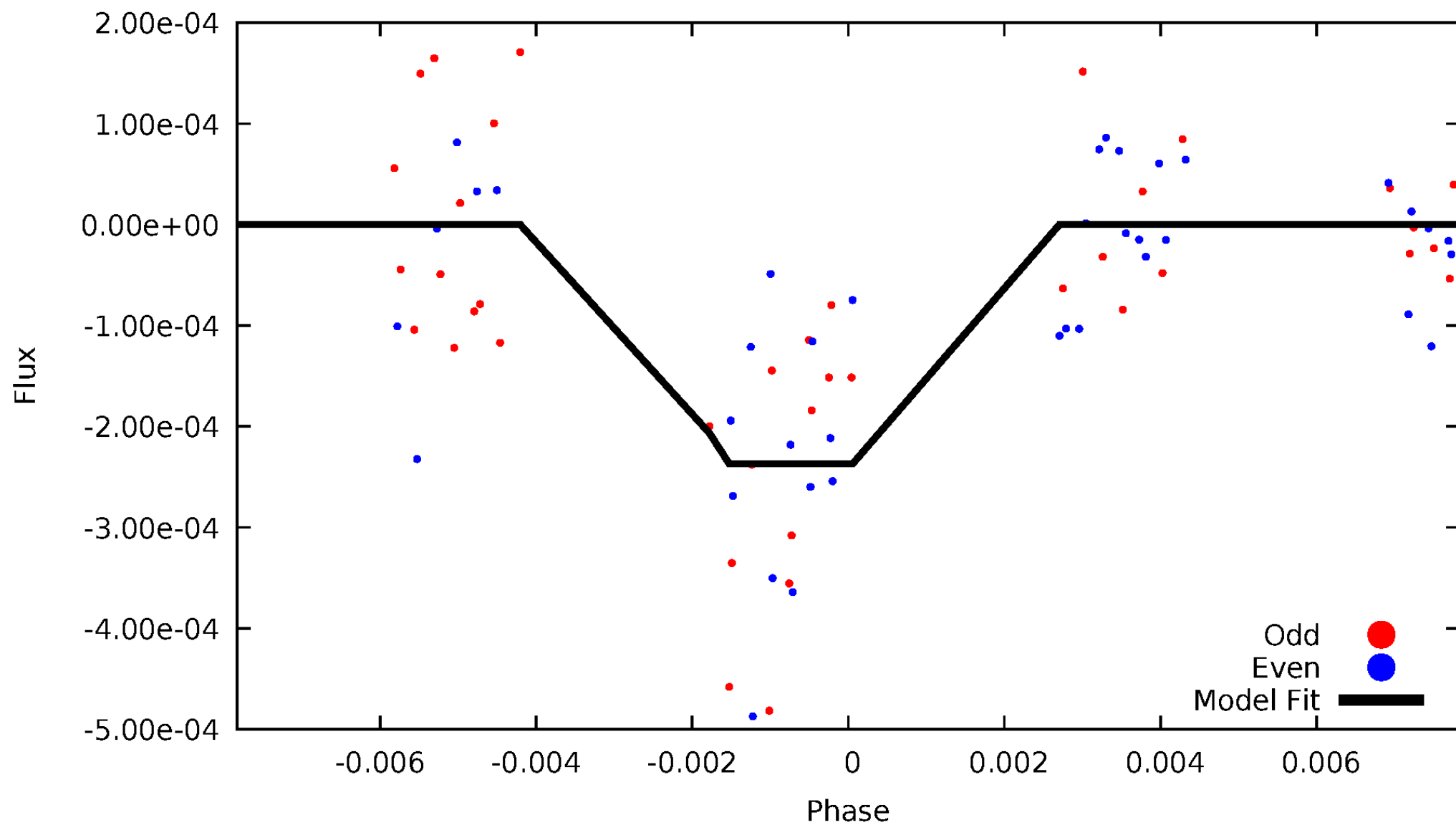
DV Odd/Even

TCE 007841640-03



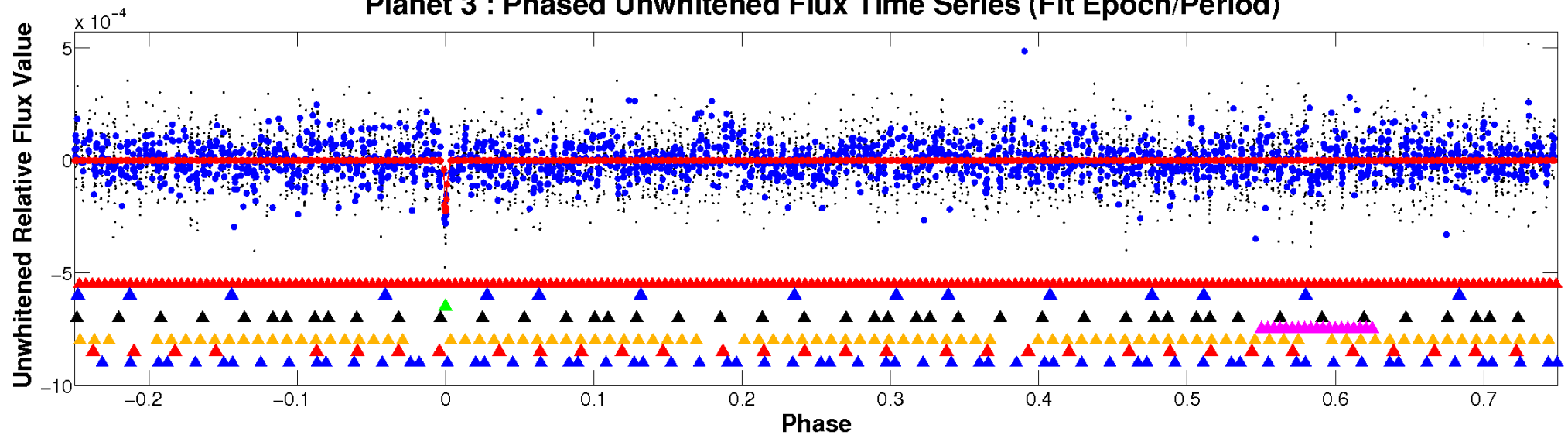
ALT Odd/Even

TCE 007841640-03

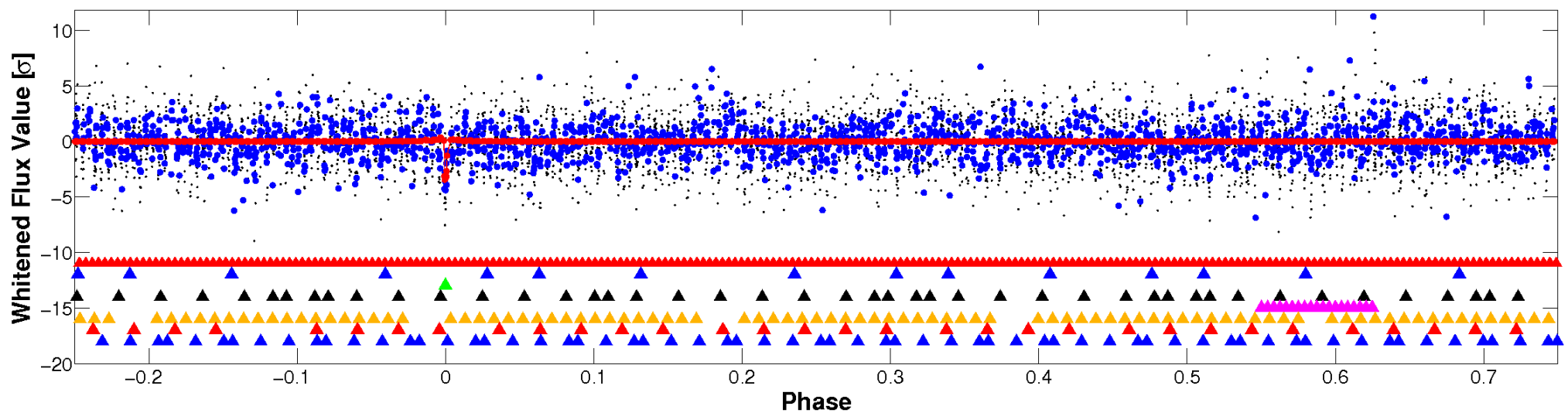


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

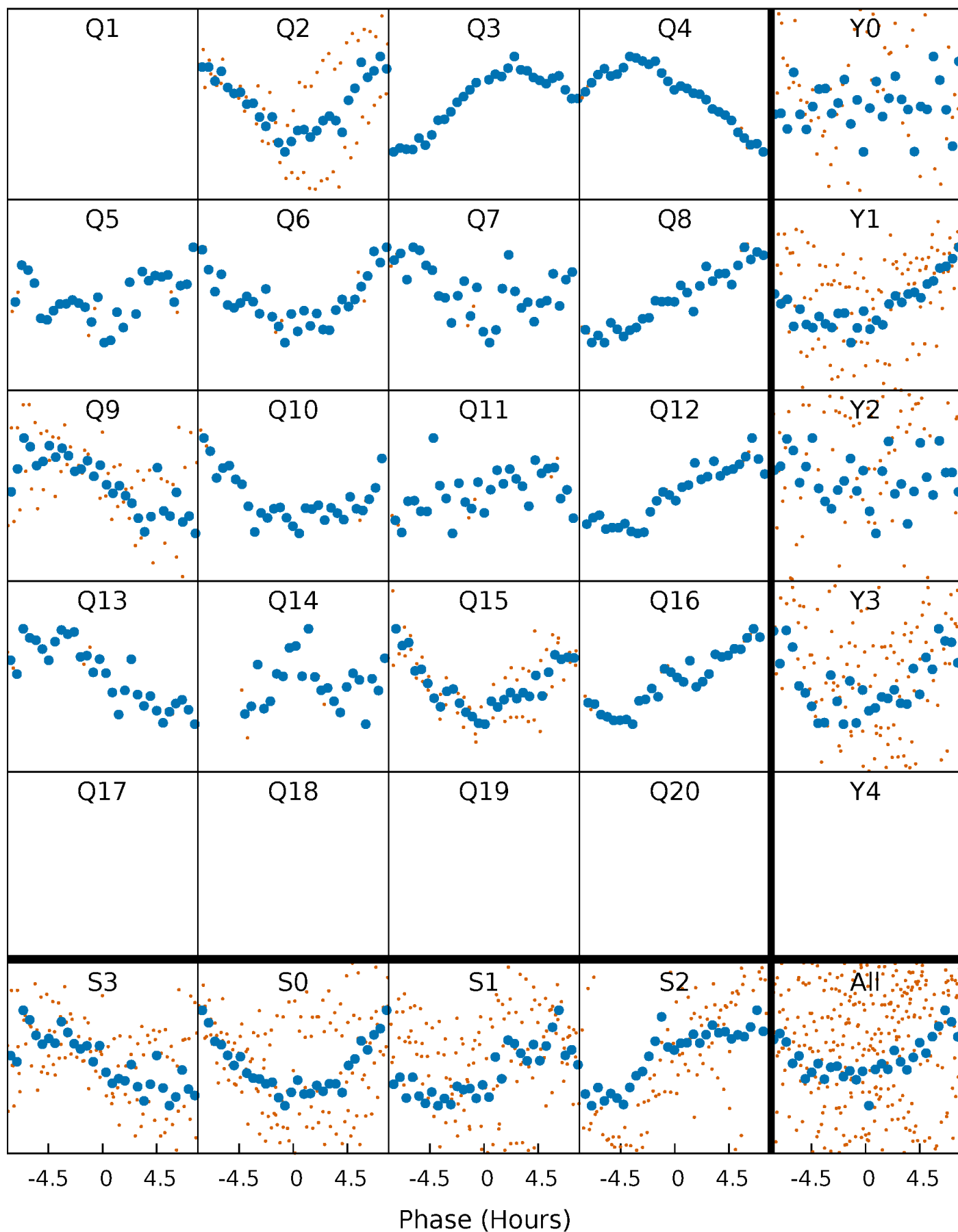


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



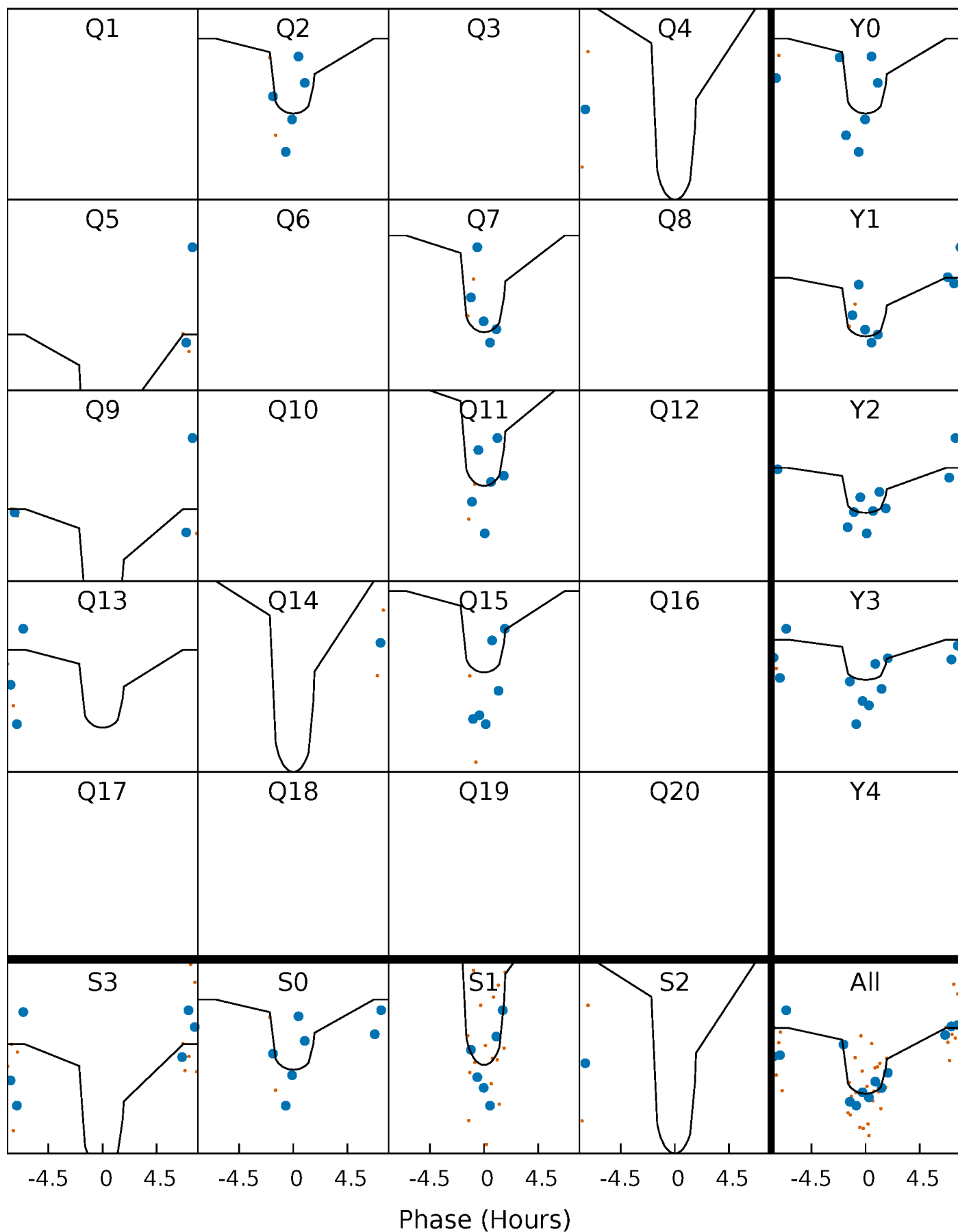
PDC Quarter-Phased Transit Curves

TCE 007841640-03 P= 79.992434 Days $T_0=176.697388$ (BKJD)



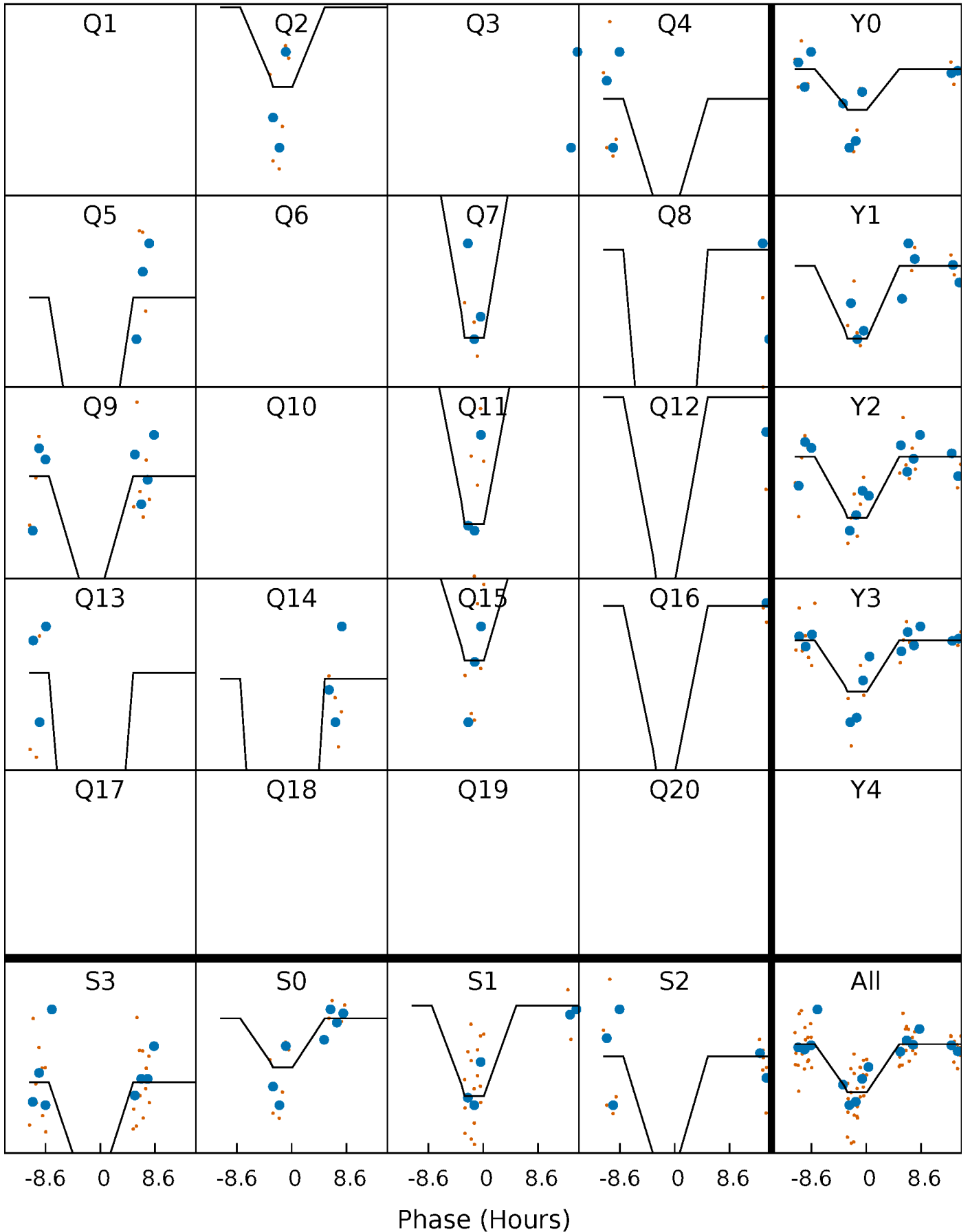
DV Quarter-Phased Transit Curves

TCE 007841640-03 P= 79.992434 Days $T_0=176.697388$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

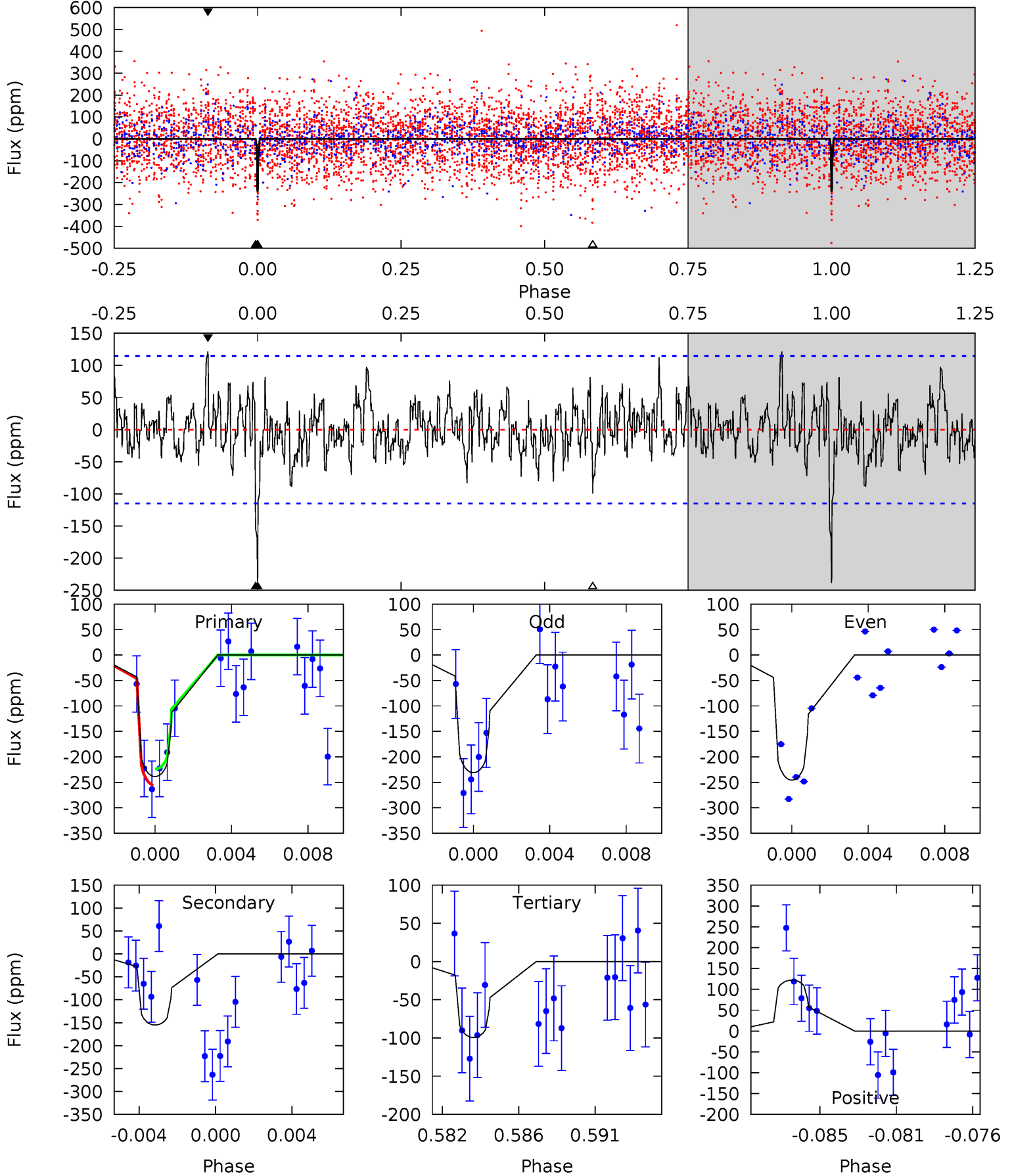
TCE 007841640-03 P= 79.992986 Days $T_0=176.757948$ (BKJD)



DV Model-Shift Uniqueness Test

007841640-03, P = 79.992434 Days, E = 96.704954 Days

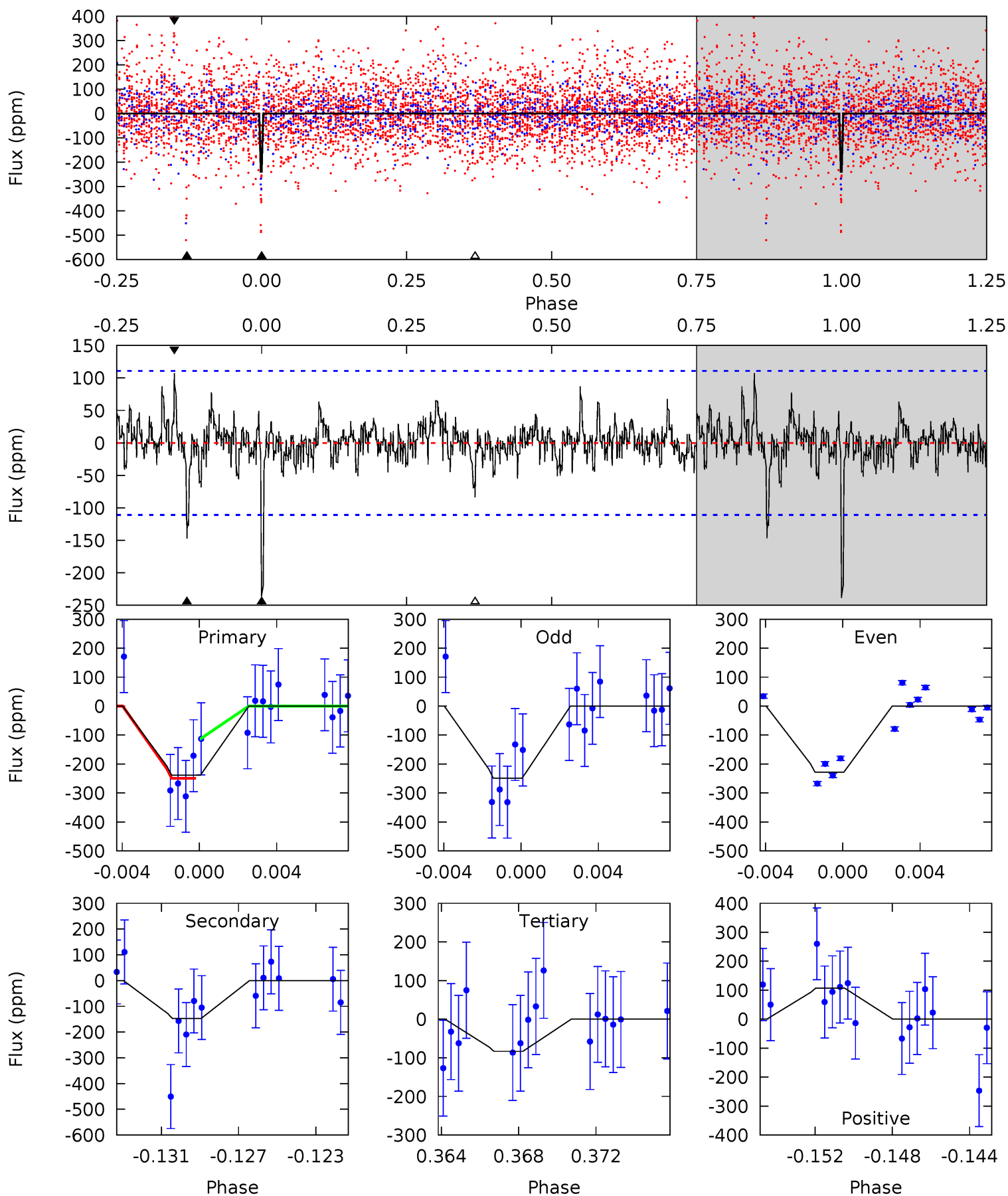
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	7.01	4.49	5.51	5.19	2.86	1.46	6.30	5.28	2.52	1.50	0.33	1.03	0.34	0.70



Alt Model-Shift Uniqueness Test

007841640-03, P = 79.992986 Days, E = 96.764962 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	6.89	3.91	5.03	5.19	2.86	1.05	7.26	6.13	2.98	1.85	0.49	1.00	0.31	1.80



Stellar Parameters For KIC 007841640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6886^{+163}_{-245}	$3.789^{+0.292}_{-0.097}$	$-0.080^{+0.250}_{-0.300}$	$2.775^{+0.428}_{-0.998}$	$1.726^{+0.163}_{-0.353}$	$0.114^{+0.237}_{-0.036}$
	+2%/-4%	+8%/-3%	+312%/-375%	+15%/-36%	+9%/-20%	+208%/-32%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007841640-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-155 ± 22	$6.00^{+5.05}_{-3.85}$	1048^{+60}_{-88}	5270^{+4265}_{-1127}	433^{+3169}_{-304}
Alt.	-147 ± 21	$5.57^{+5.78}_{-3.69}$	1046^{+67}_{-89}	5384^{+4549}_{-1274}	482^{+3801}_{-365}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

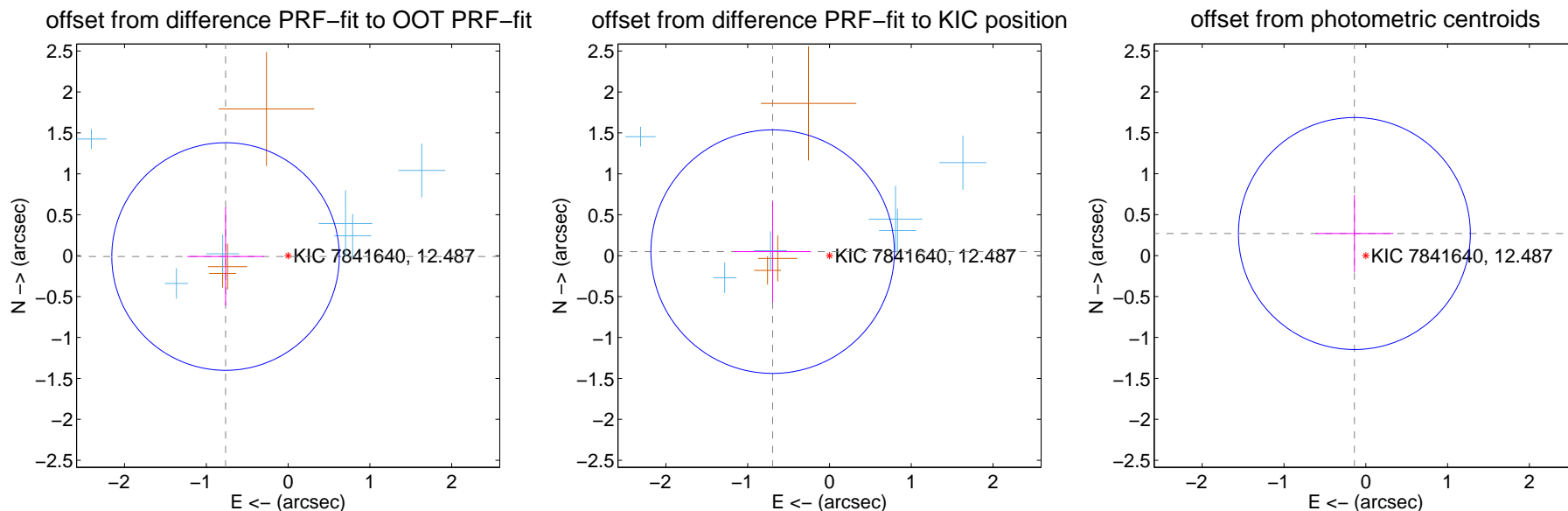
DV Centroid Data

Supplemental centroid analysis for 007841640-03. Kepler magnitude: 12.49. Transit SNR 15.22

There are 6 quarters with good PRF difference image offsets

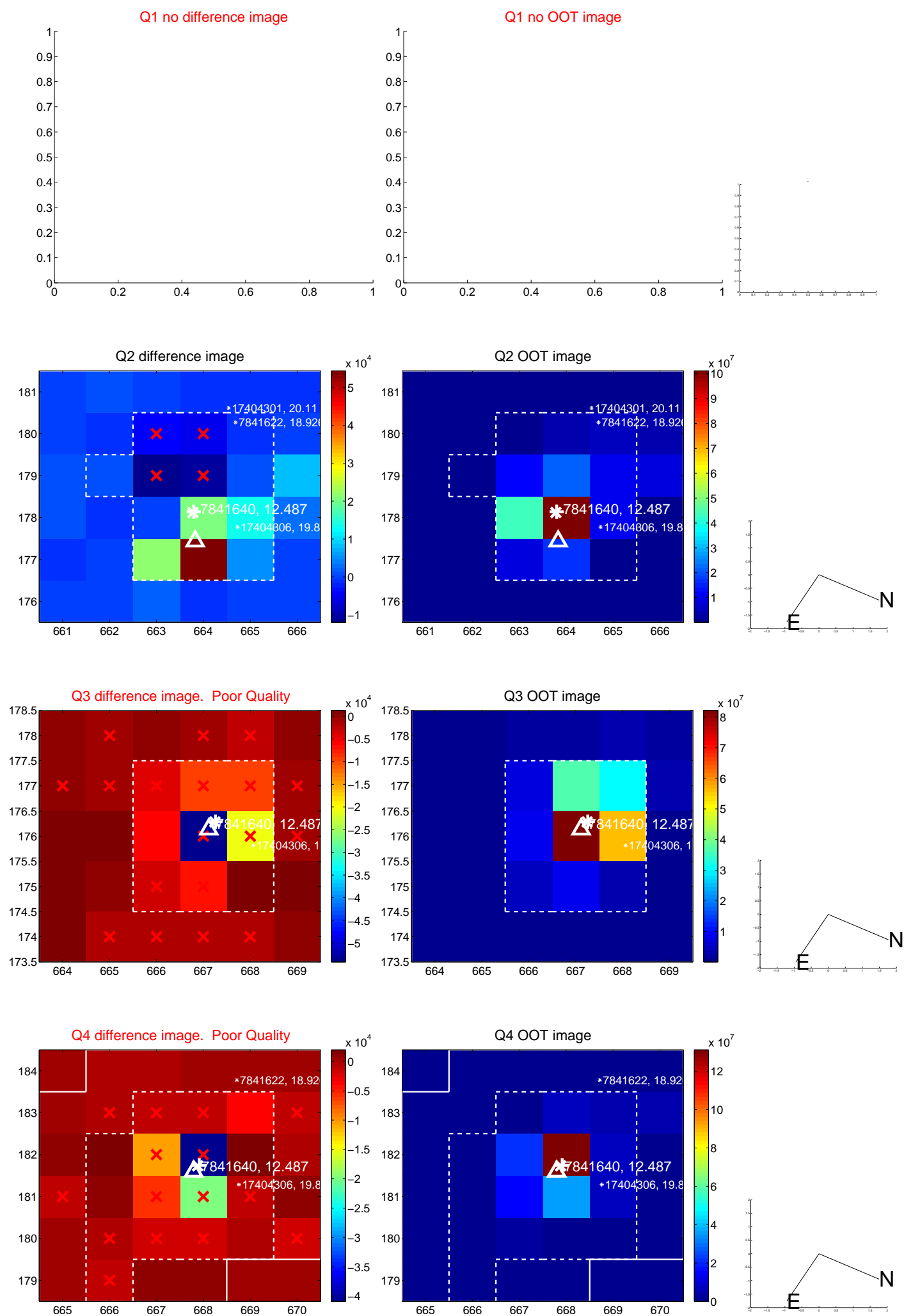
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.765 ± 0.464	1.65	0.765 ± 0.469	-0.011 ± 0.600
PRF-fit source offset from KIC position	0.697 ± 0.496	1.40	0.695 ± 0.469	0.049 ± 0.619
photometric centroid source offset	0.30 ± 0.47	0.64	0.14 ± 0.48	0.27 ± 0.47

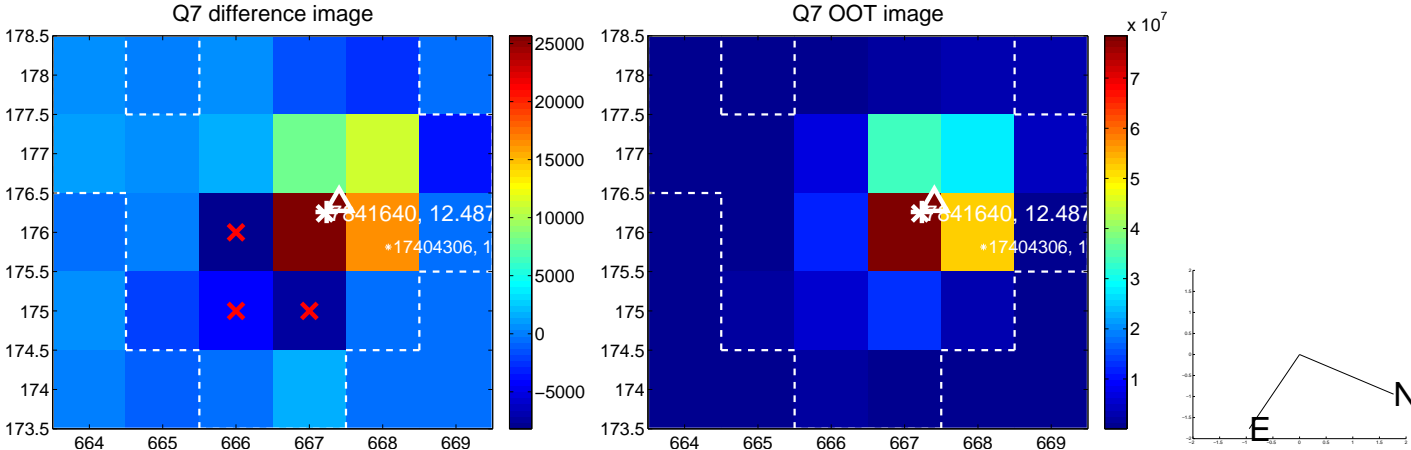
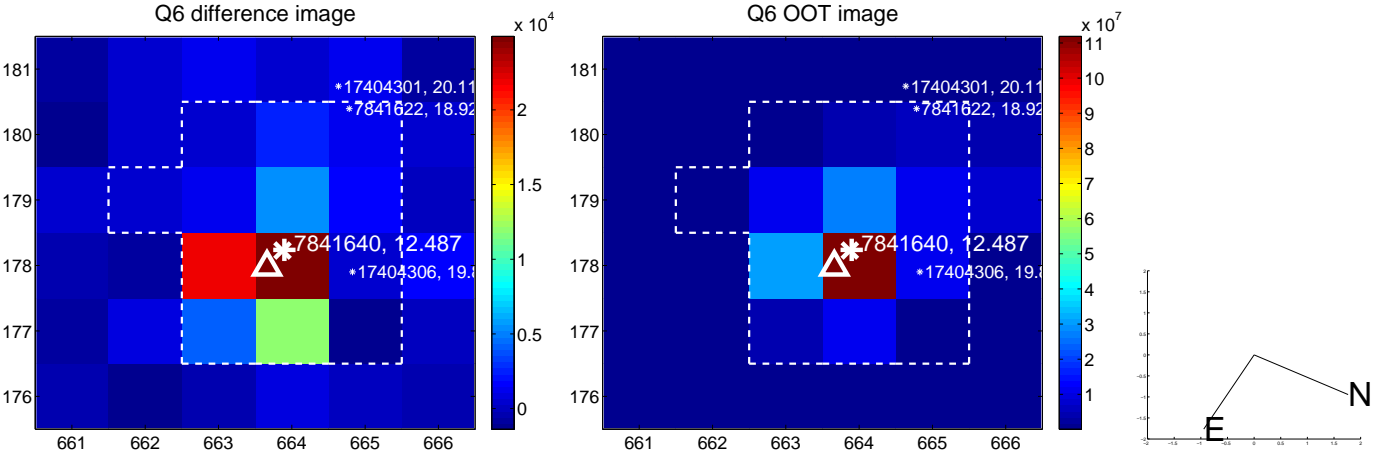
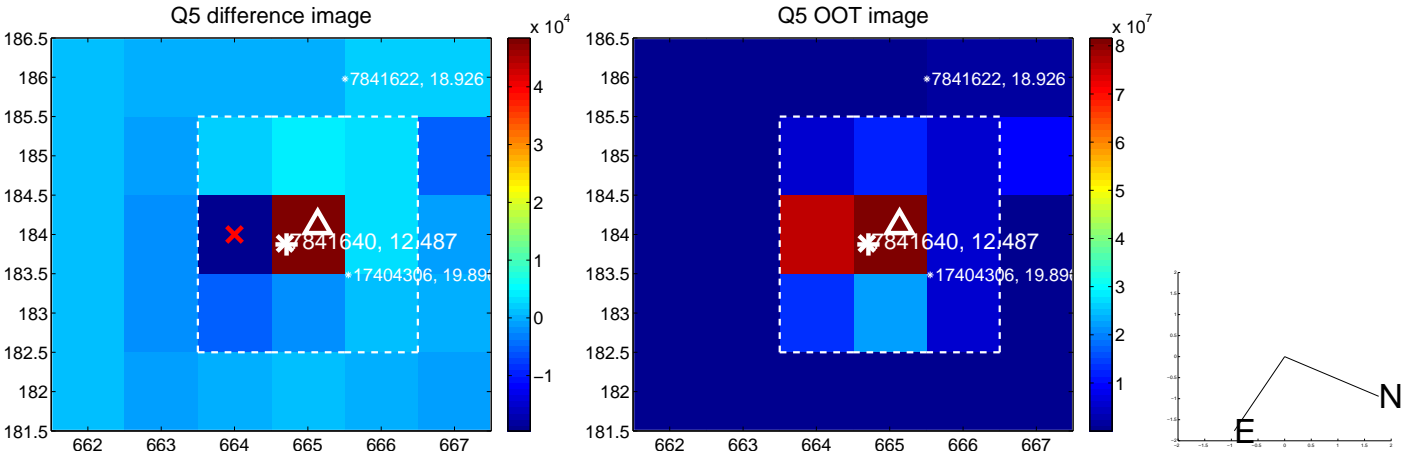


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

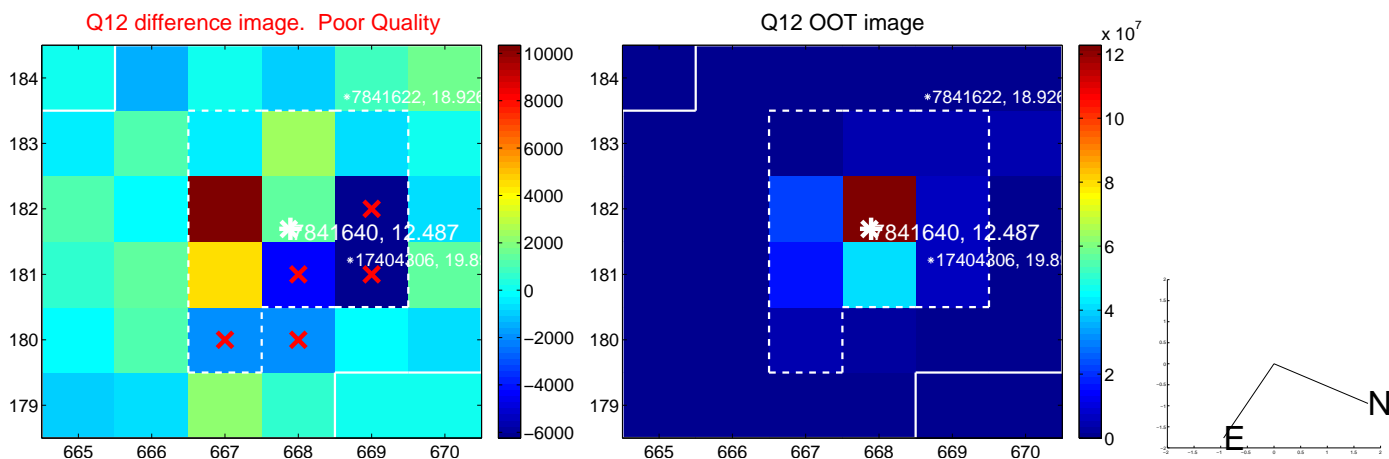
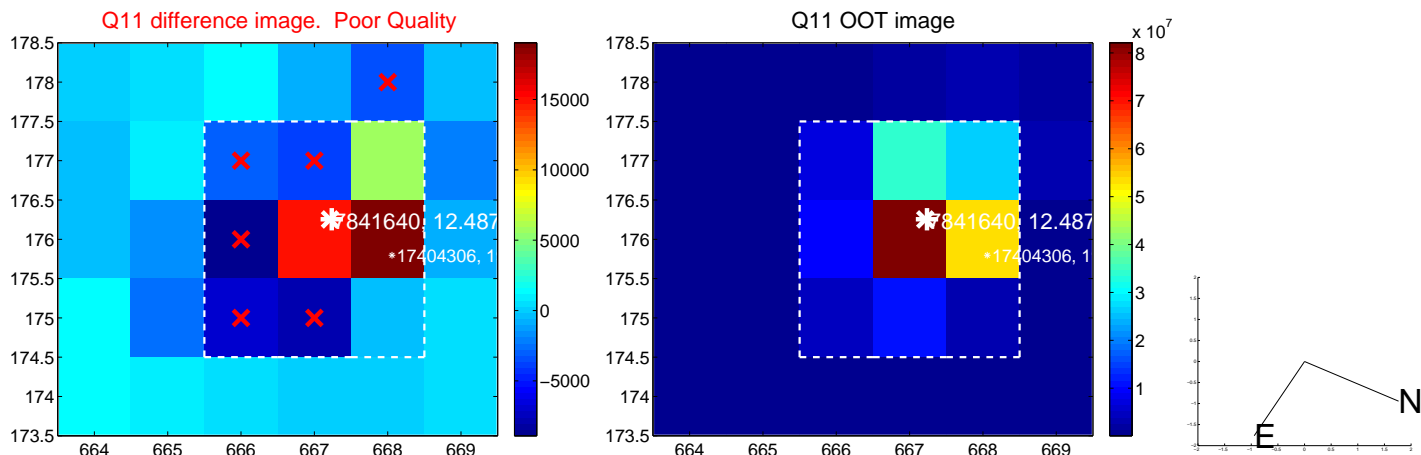
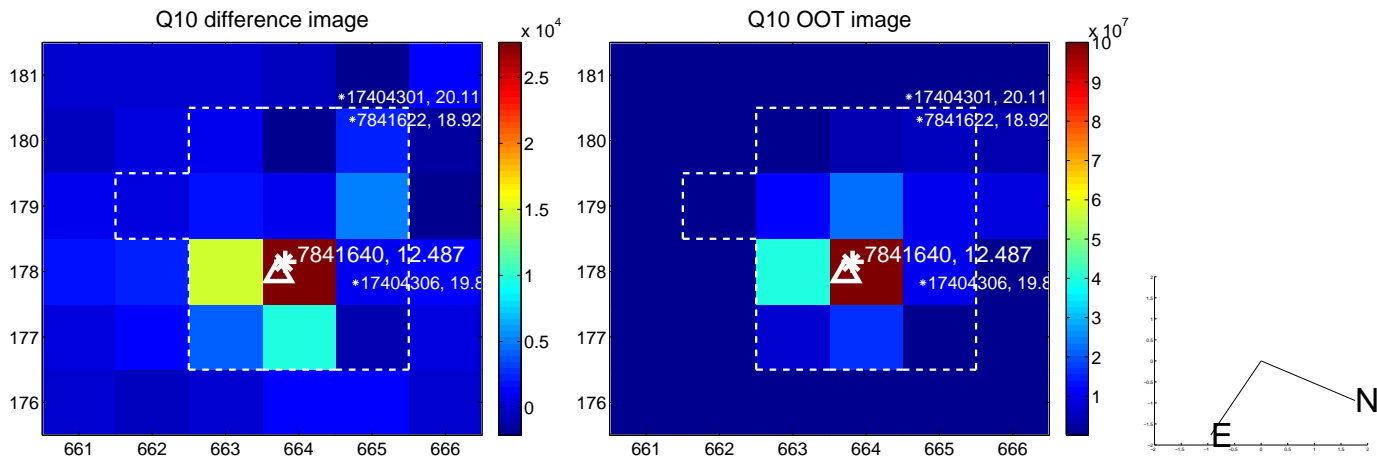
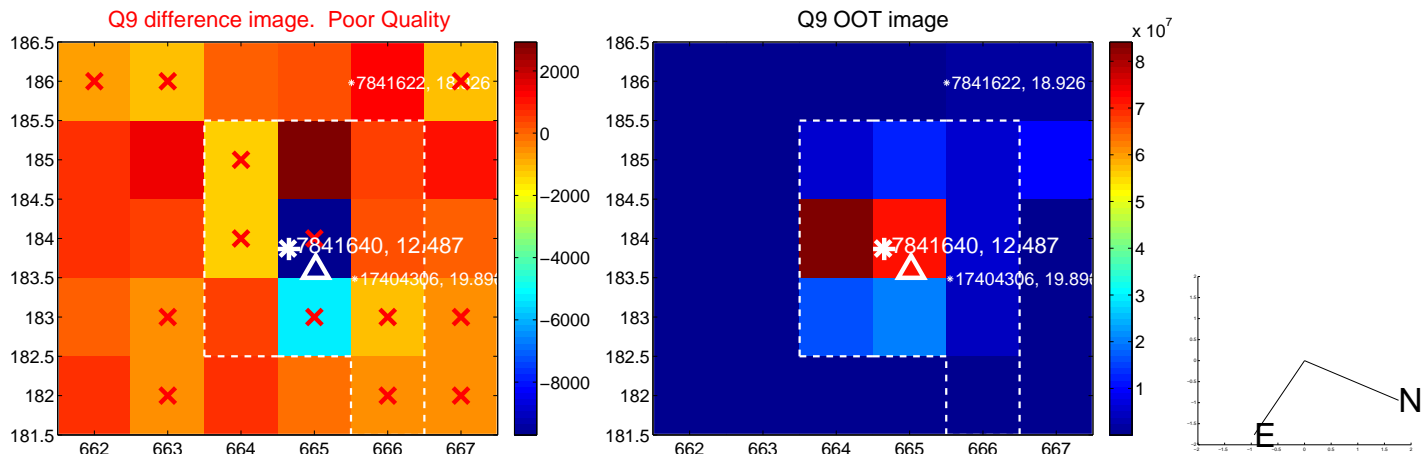
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



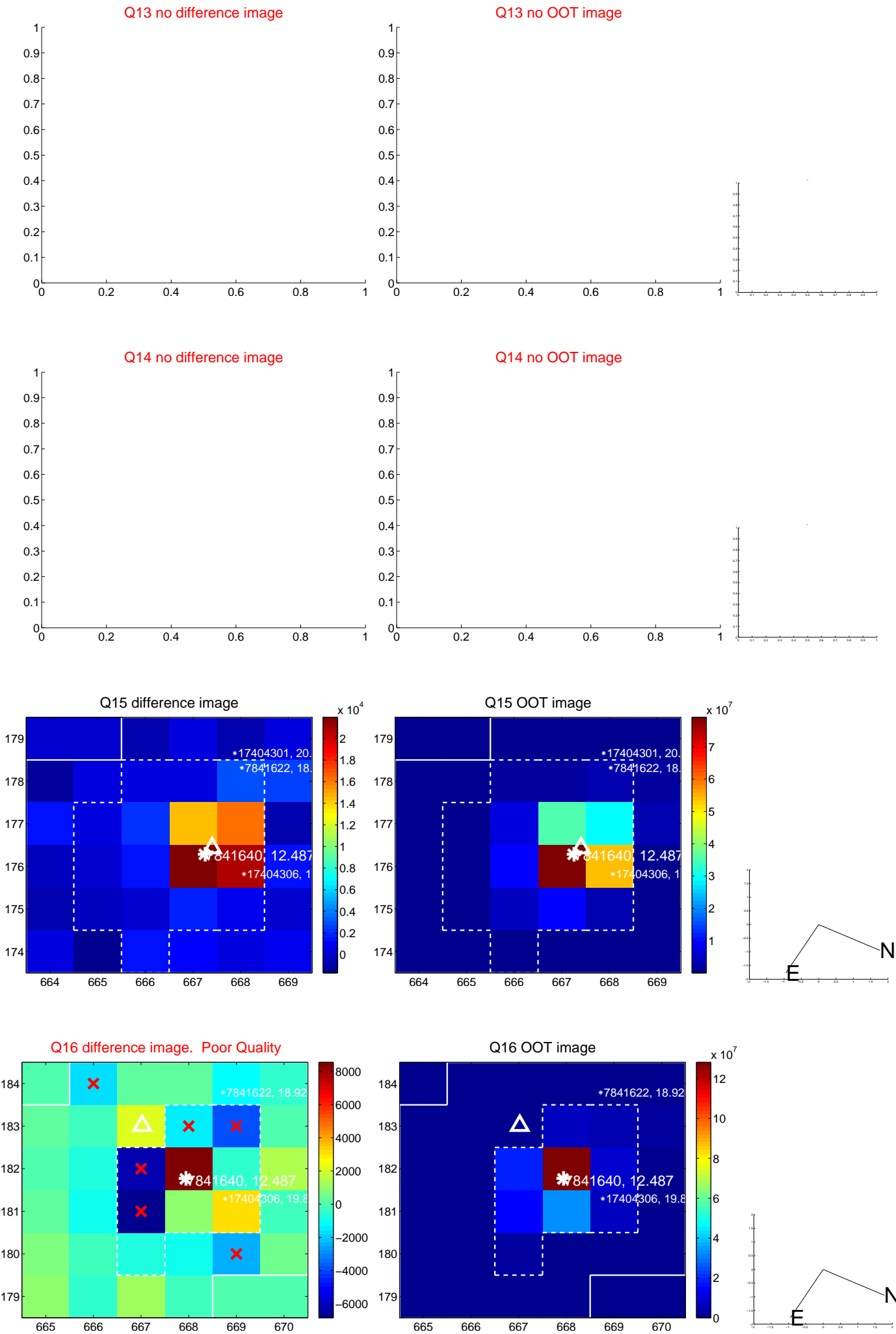
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



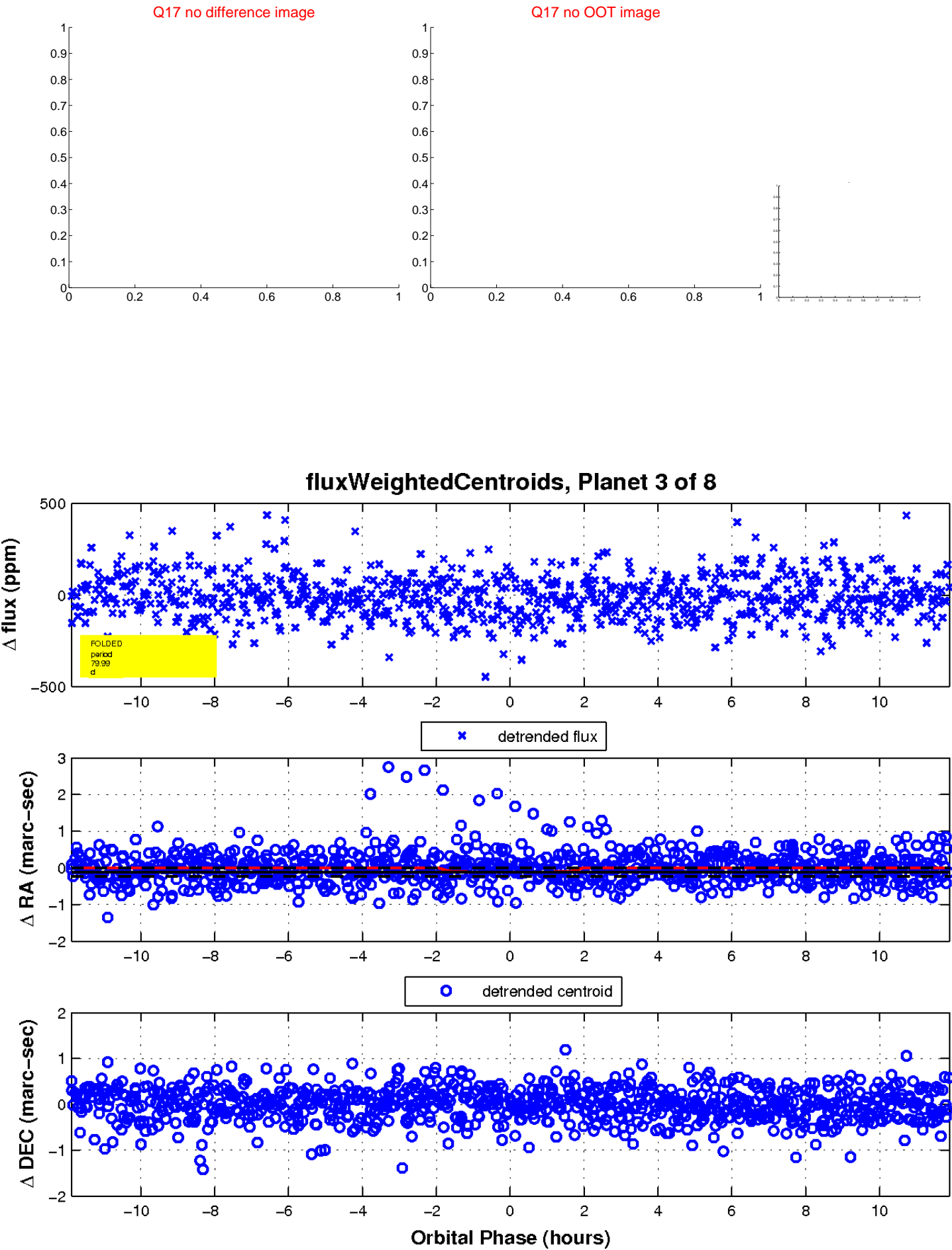
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

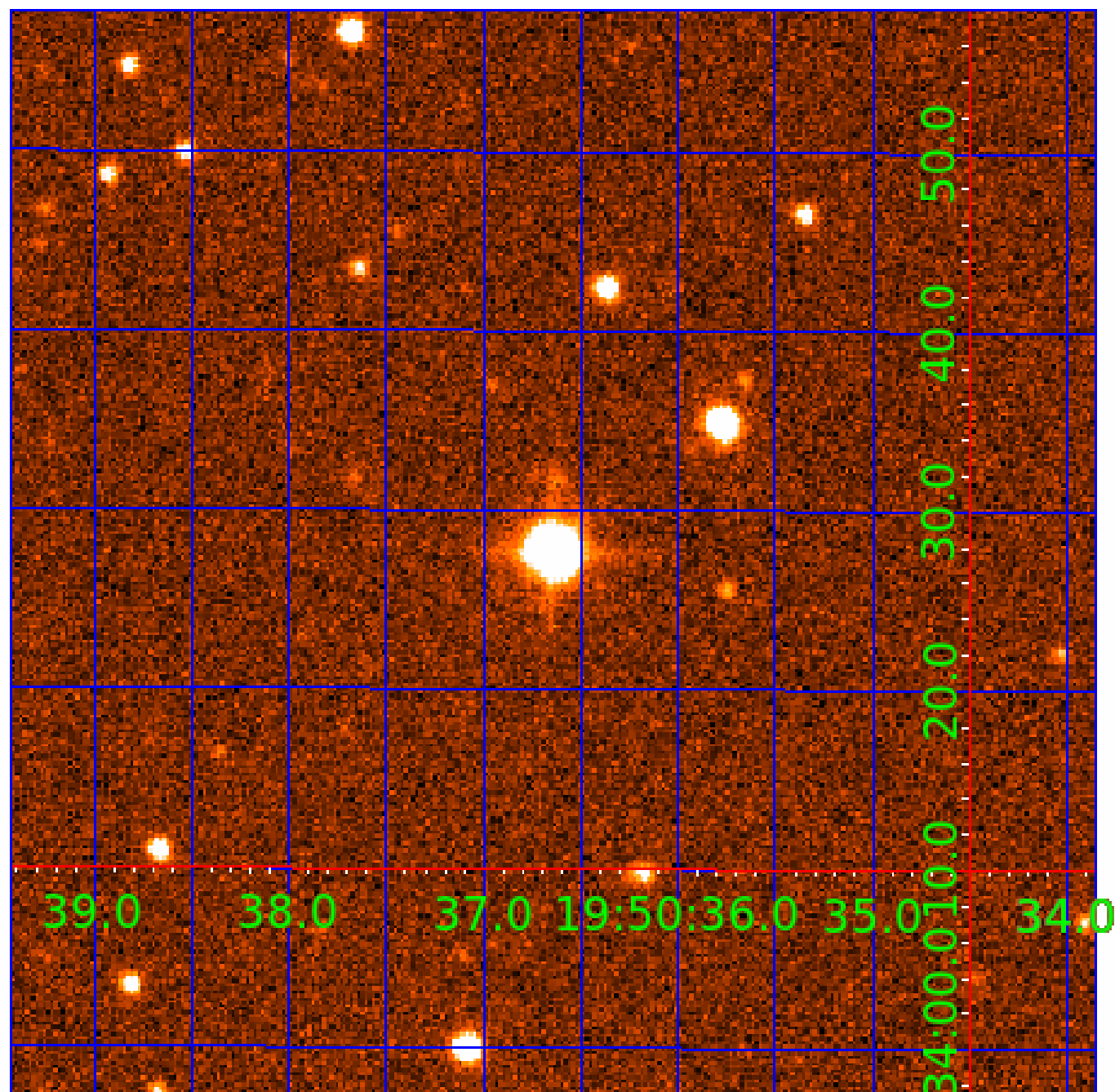


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007841640

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007841640-01	OBS	No	1.716619	132.218549	3.5	12.498	8.5	2.2	2.77	6886	0.54	13678.52
007841640-03	OBS	No	79.992434	176.697388	225.8	3.966	16.8	15.2	2.77	6886	4.85	81.57
007841640-04	OBS	No	32.448993	134.941138	264.1	1.099	15.4	11.6	2.77	6886	4.61	271.65
007841640-05	OBS	No	79.660484	146.688969	232.0	3.286	14.9	13.1	2.77	6886	4.72	82.03
007841640-06	OBS	No	15.842593	142.699268	143.4	2.022	13.4	13.3	2.77	6886	3.36	706.59
007841640-07	OBS	No	46.025128	133.576410	153.7	5.475	12.8	11.3	2.77	6886	3.97	170.46
007841640-08	OBS	No	22.135742	152.672679	123.6	3.686	13.0	12.1	2.77	6886	3.48	452.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007841640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007841640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007841640-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

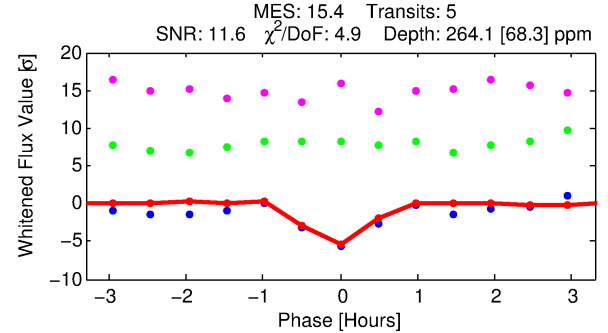
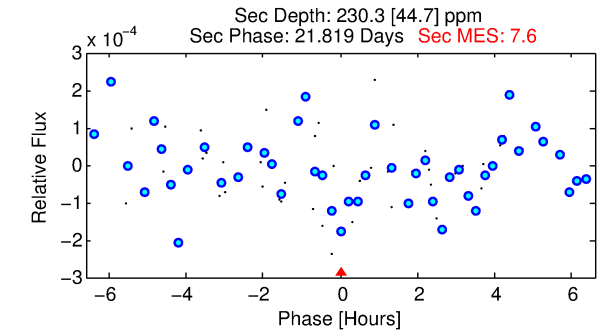
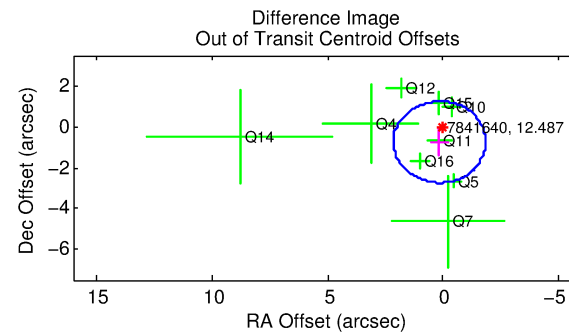
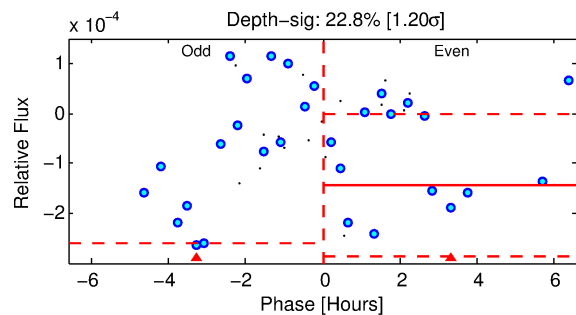
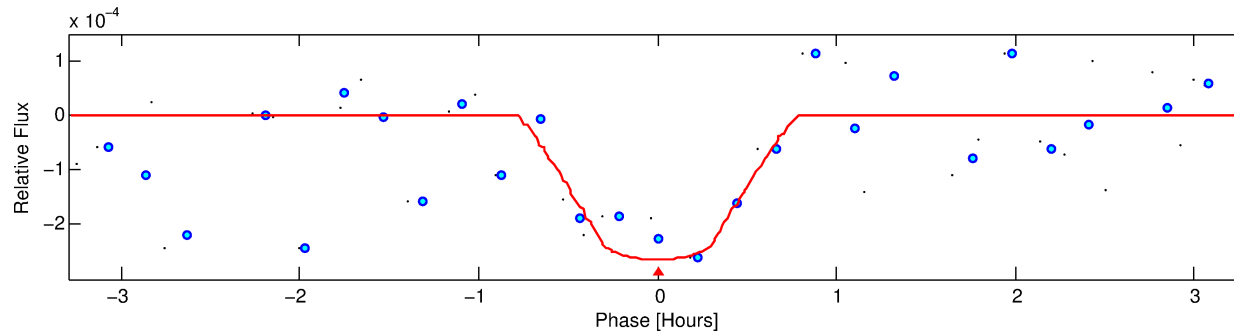
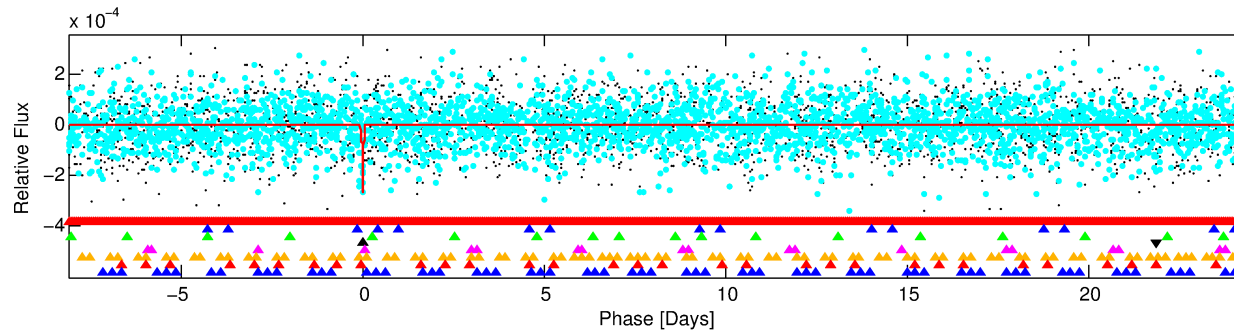
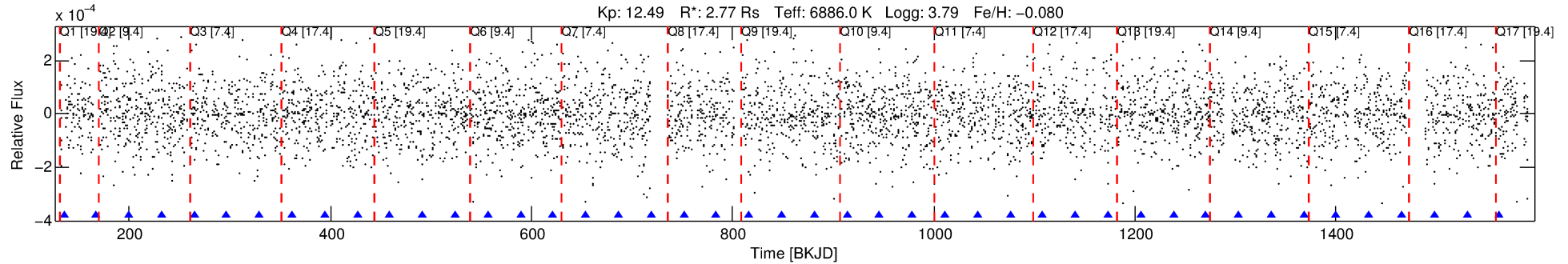
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007841640-04

No Significant Match Found

DV One-Page Summary

KIC: 7841640 Candidate: 4 of 8 Period: 32.449 d



DV Fit Results:

Period = 32.44899 [0.00029] d
Epoch = 134.9411 [0.0092] BKJD
Rp/R* = 0.0152 [0.0304]
a/R* = 221.51 [2428.96]
b = 0.26 [40.14]
Seff = 271.65 [143.40]
Teq = 1035 [137] K
Rp = 4.61 [9.35] Re
a = 0.2390 [0.0784] AU
Ag = 340.91 [1373.87] [0.25 σ]
Teffp = 6877 [6878] K [0.85 σ]

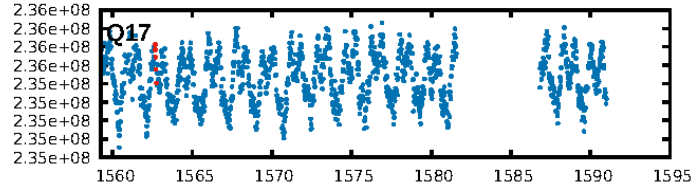
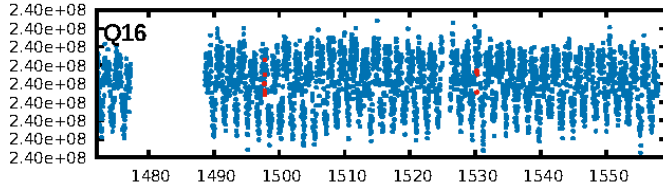
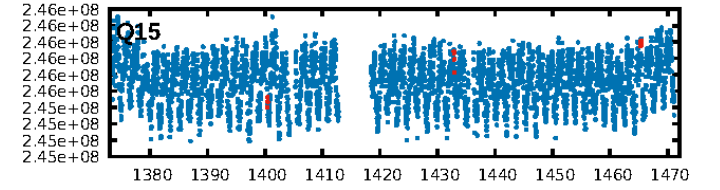
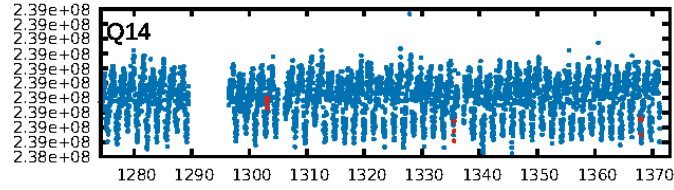
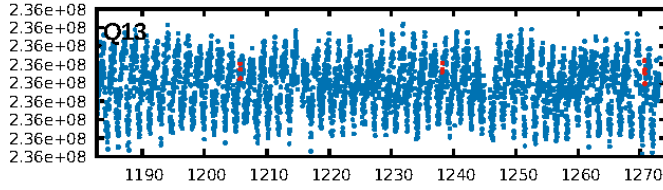
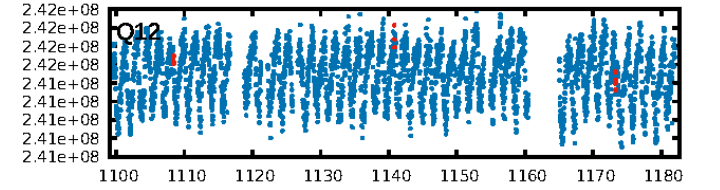
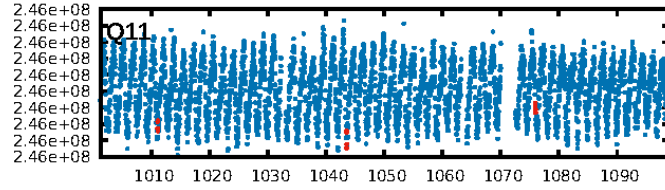
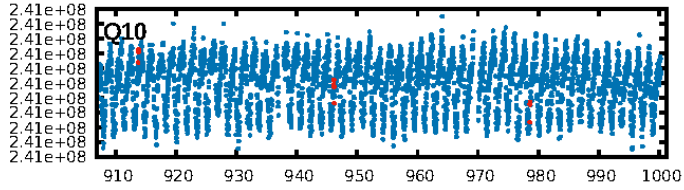
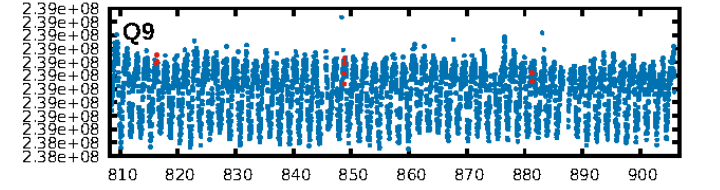
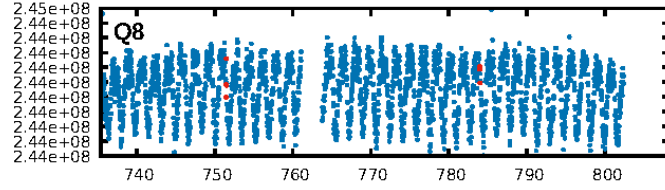
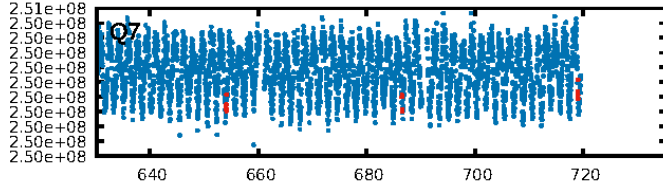
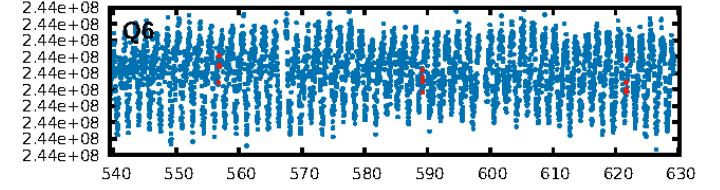
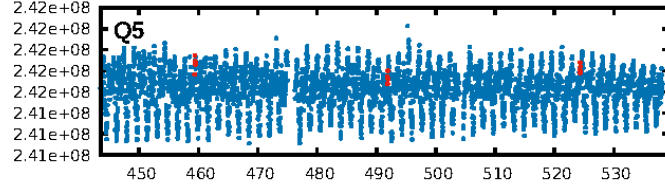
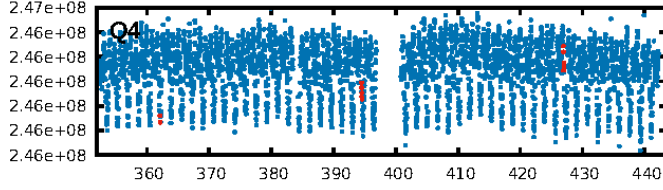
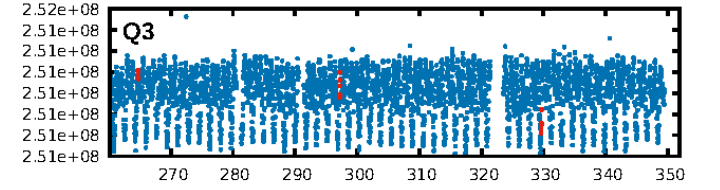
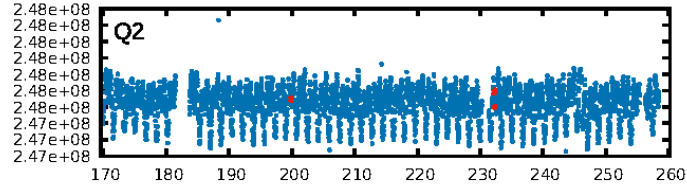
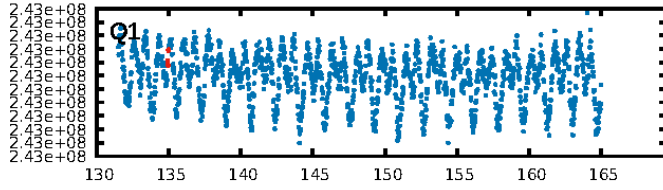
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.34 σ]
LongPeriod-sig: 100.0% [58.34 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 6.5%
Bootstrap-pfa: 5.04e-12
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.6065
Centroid-sig: N/A
Centroid-so: 0.561 arcsec [1.27 σ]
OotOffset-rm: 0.763 arcsec [1.15 σ]
KicOffset-rm: 0.697 arcsec [1.05 σ]
OotOffset-st: 2/3/3/1 [9]
KicOffset-st: 2/3/3/1 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.59 [10/17]

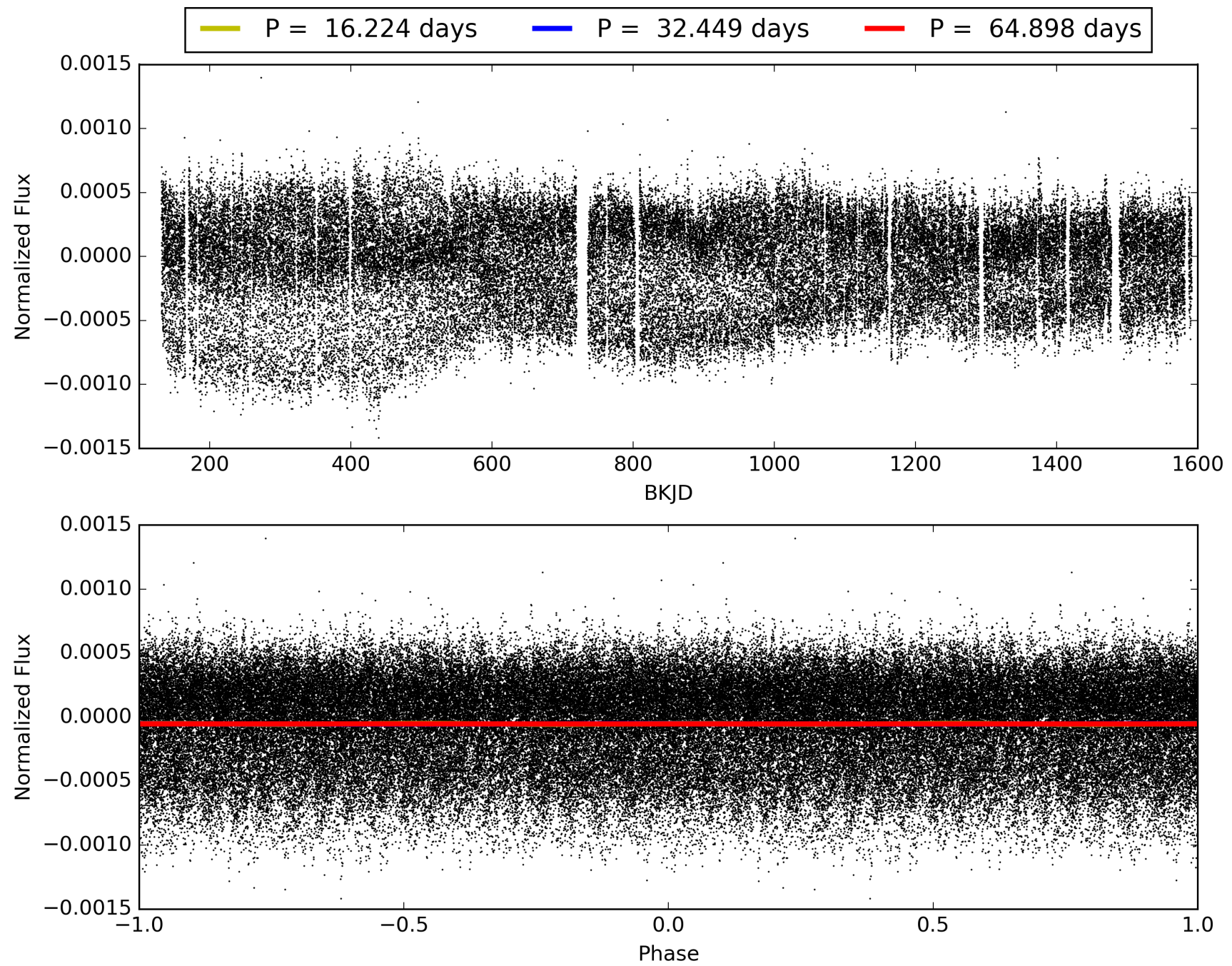
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:39 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007841640-04, PDC Light Curves

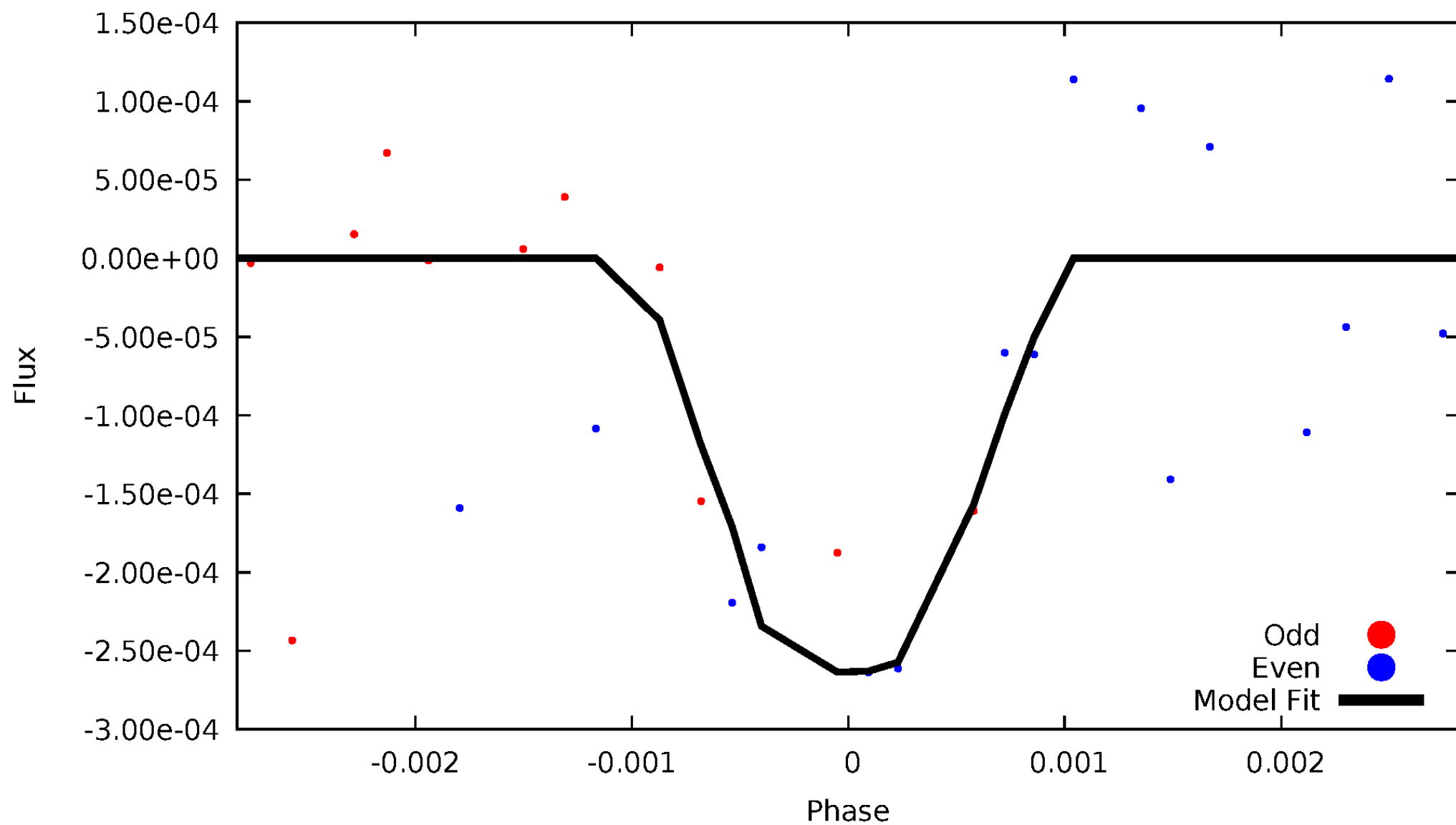


TCE 007841640-04



DV Odd/Even

TCE 007841640-04

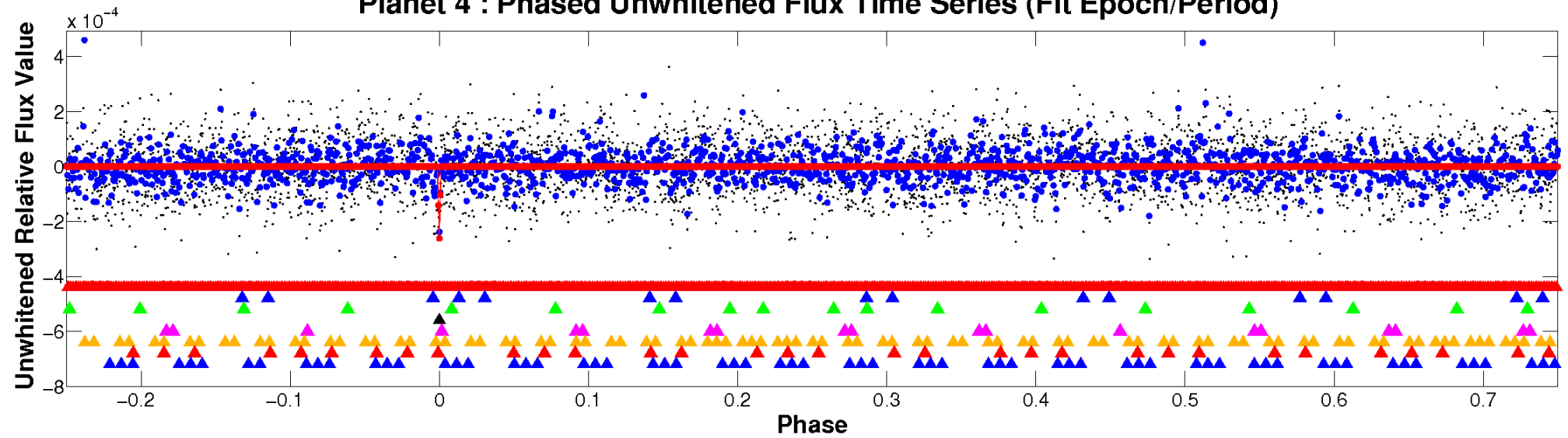


ALT Odd/Even

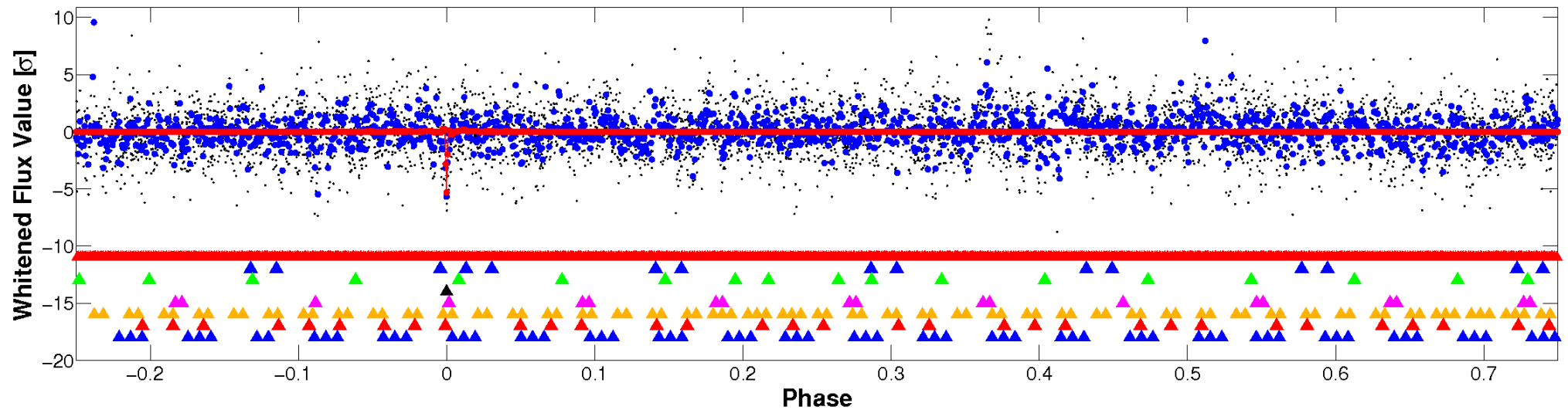
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

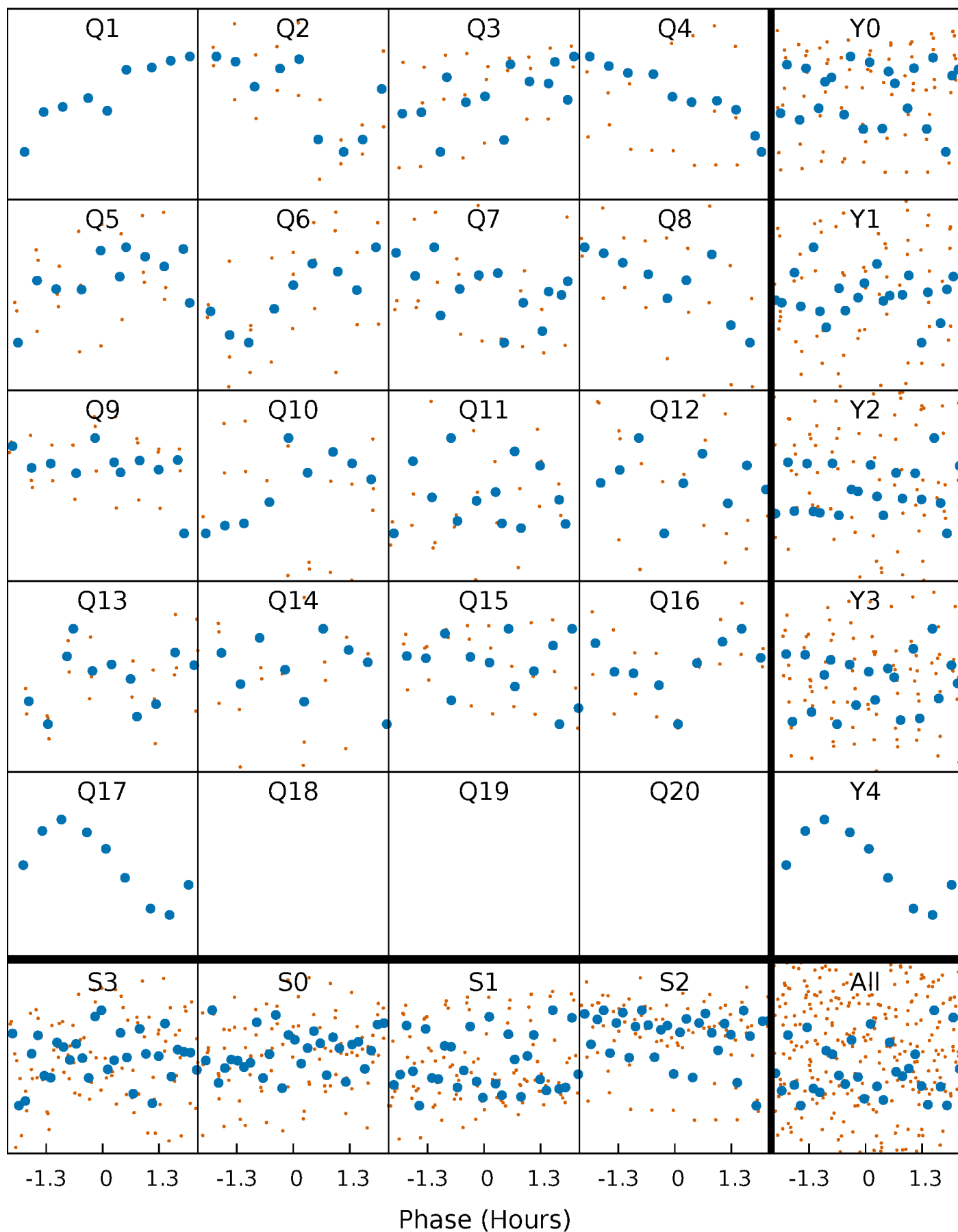


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



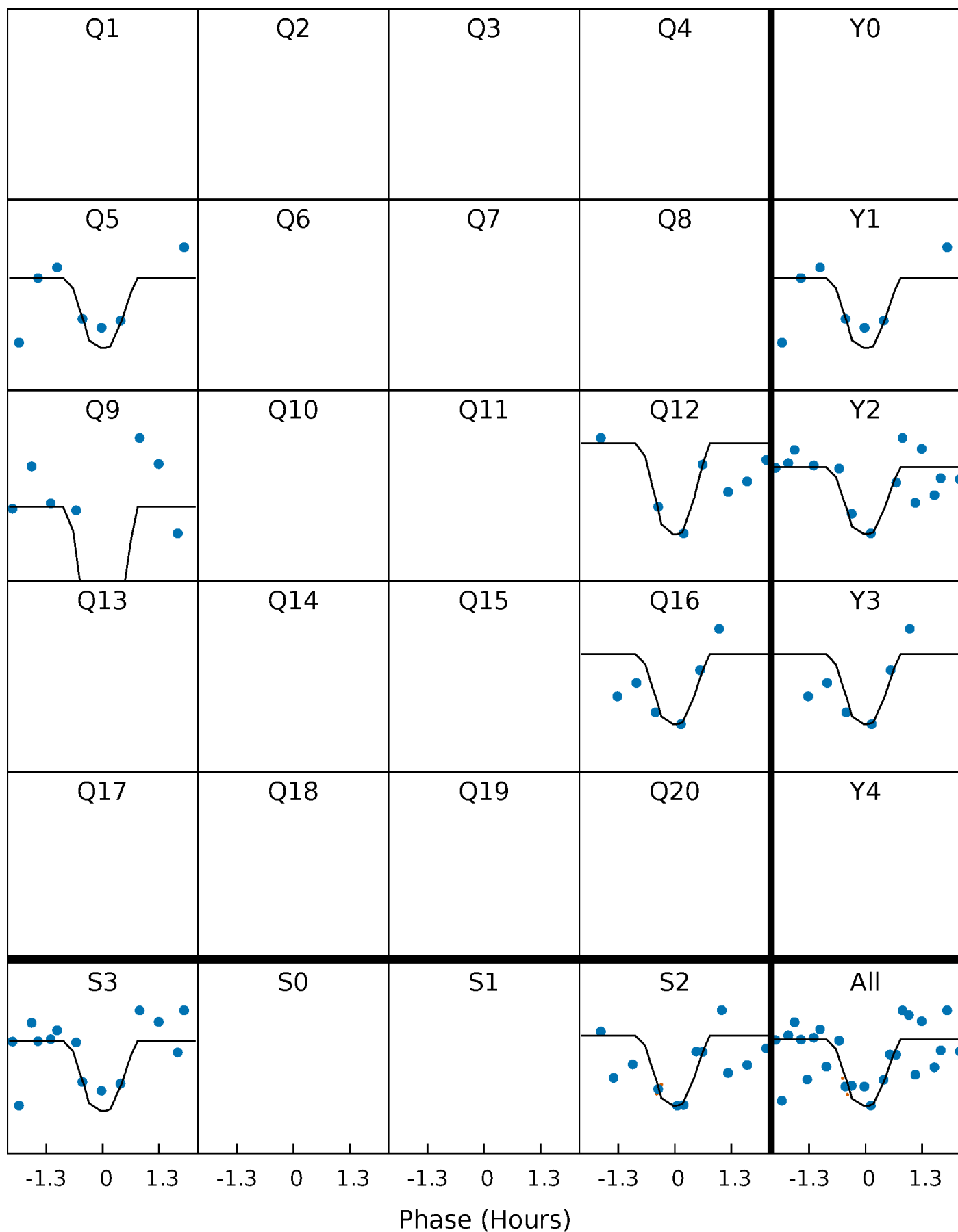
PDC Quarter-Phased Transit Curves

TCE 007841640-04 P= 32.448993 Days $T_0=134.941138$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007841640-04 P= 32.448993 Days $T_0=134.941138$ (BKJD)

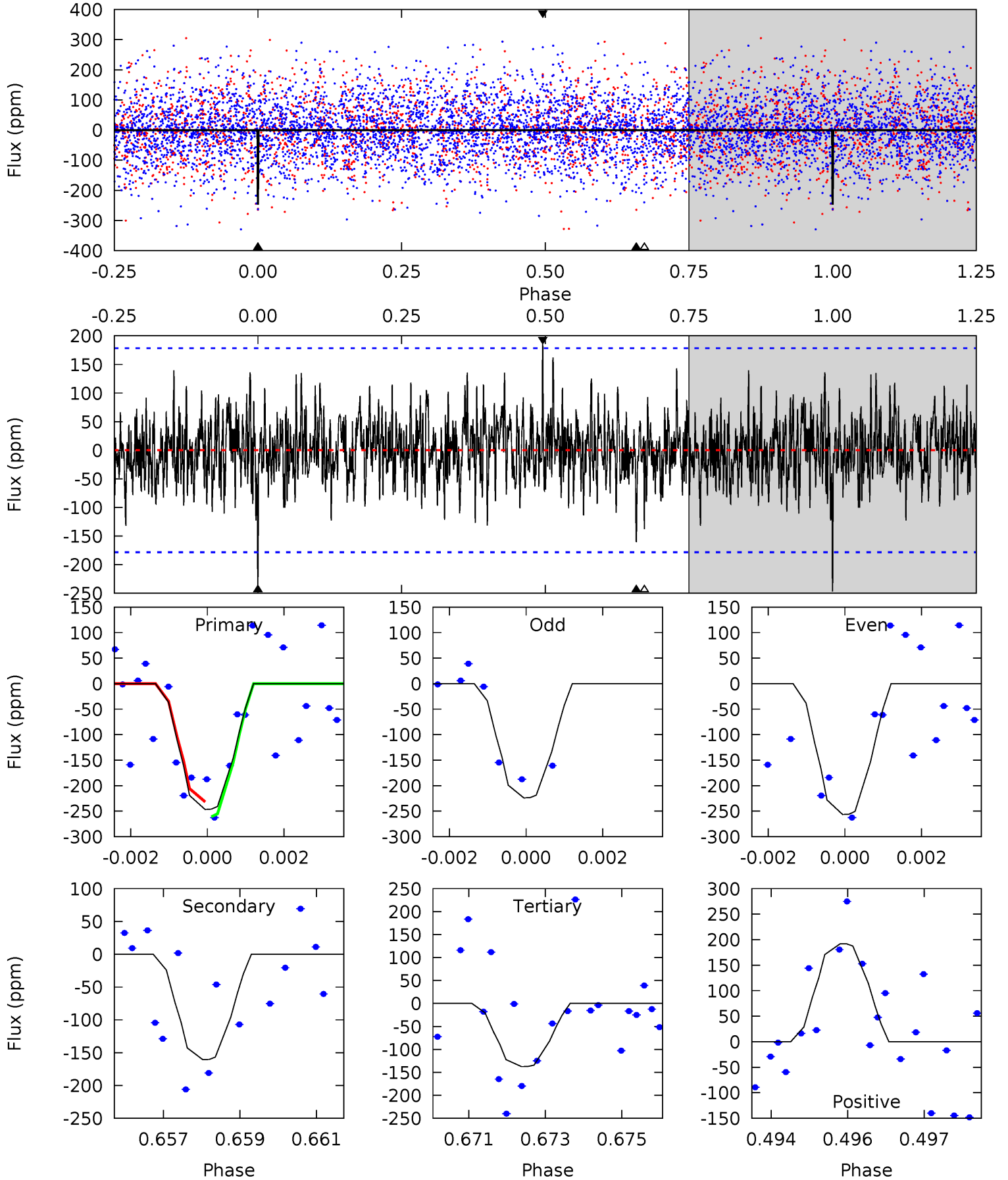


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007841640-04, P = 32.448993 Days, E = 102.492145 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.41	4.83	4.13	5.77	5.35	3.13	1.36	3.28	1.64	0.69	-0.95	0.42	1.02	0.44	0.43



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007841640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6886^{+163}_{-245}	$3.789^{+0.292}_{-0.097}$	$-0.080^{+0.250}_{-0.300}$	$2.775^{+0.428}_{-0.998}$	$1.726^{+0.163}_{-0.353}$	$0.114^{+0.237}_{-0.036}$
	+2%/-4%	+8%/-3%	+312%/-375%	+15%/-36%	+9%/-20%	+208%/-32%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007841640-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-161±33	$7.31^{+7.46}_{-4.92}$	1421^{+85}_{-121}	4840^{+3695}_{-1058}	92^{+766}_{-69}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

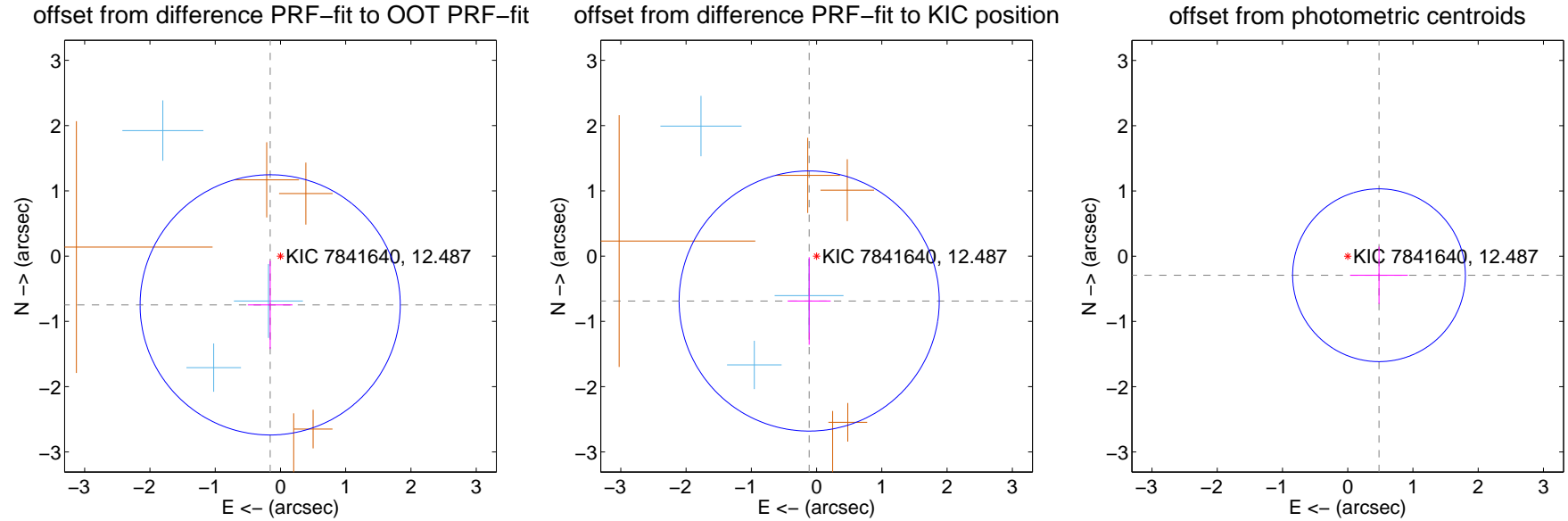
DV Centroid Data

Supplemental centroid analysis for 007841640-04. Kepler magnitude: 12.49. Transit SNR 11.59

There are 3 quarters with good PRF difference image offsets

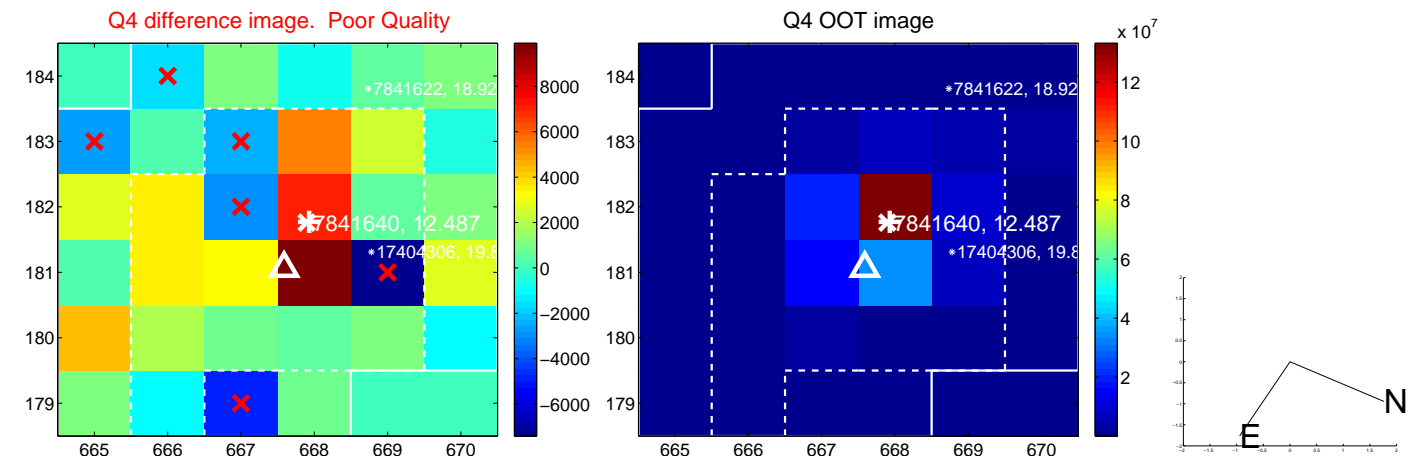
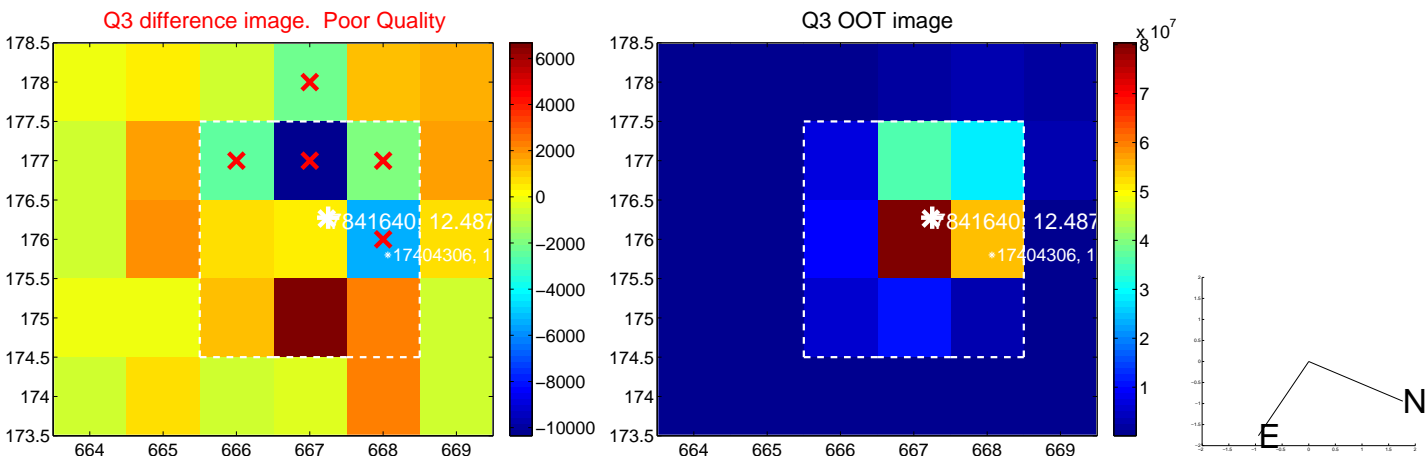
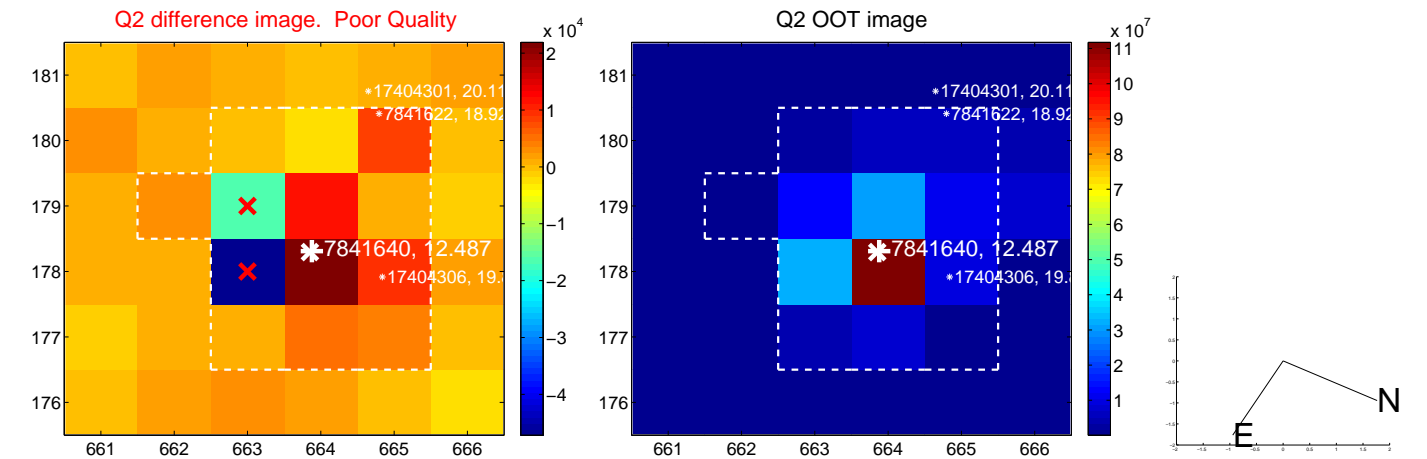
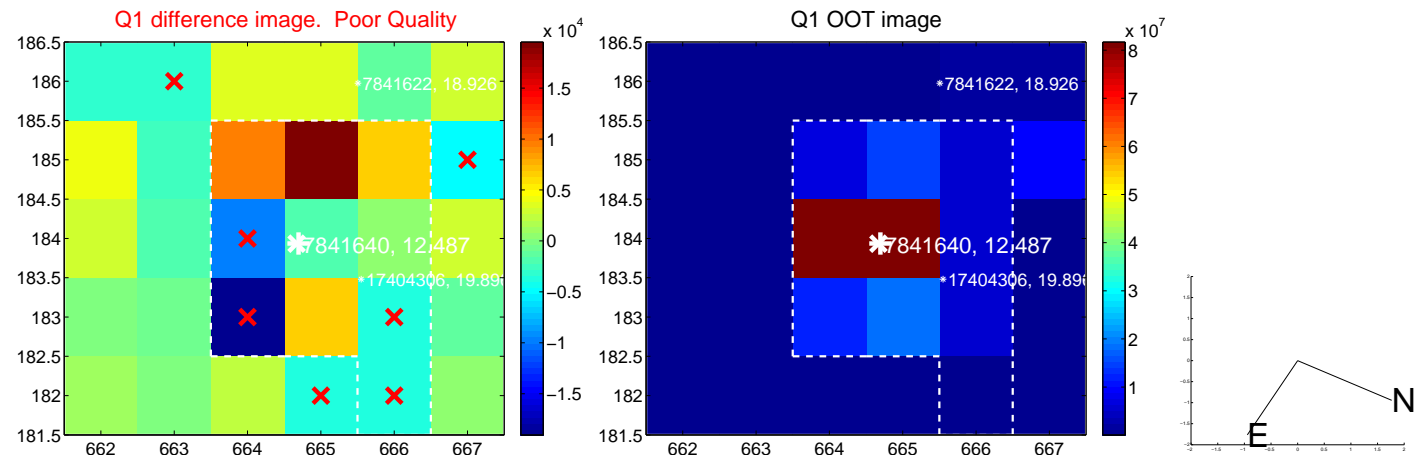
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.763 ± 0.664	1.15	0.157 ± 0.343	-0.747 ± 0.675
PRF-fit source offset from KIC position	0.697 ± 0.664	1.05	0.113 ± 0.331	-0.687 ± 0.671
photometric centroid source offset	0.56 ± 0.44	1.27	-0.48 ± 0.44	-0.29 ± 0.44

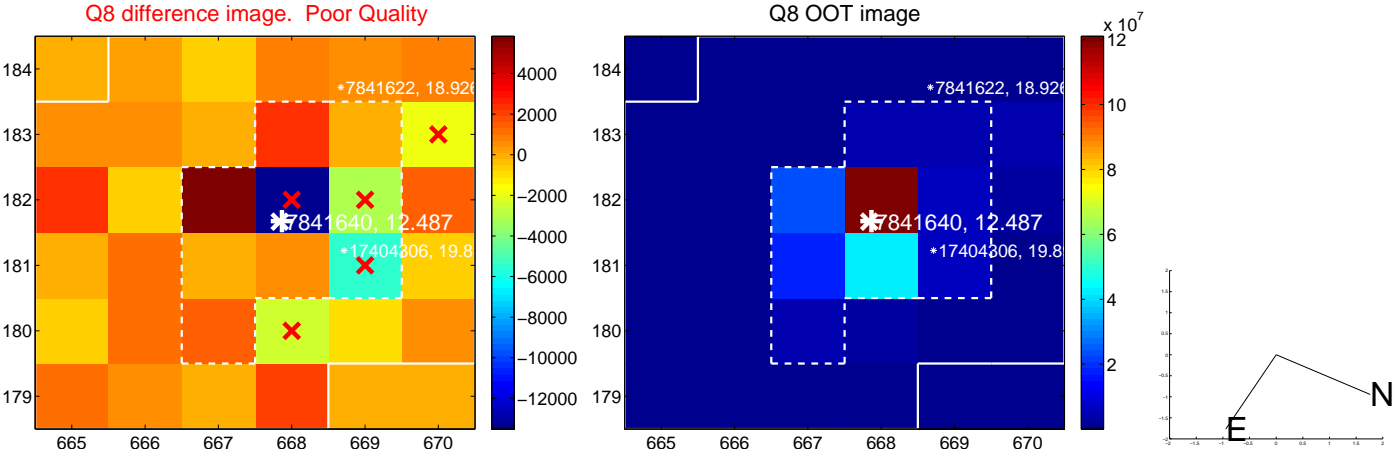
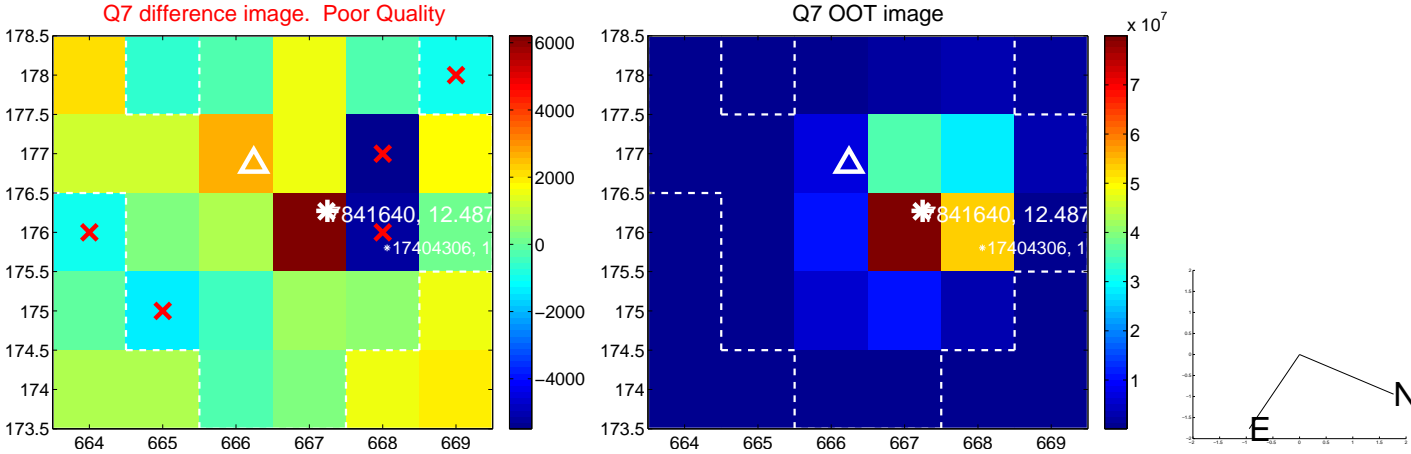
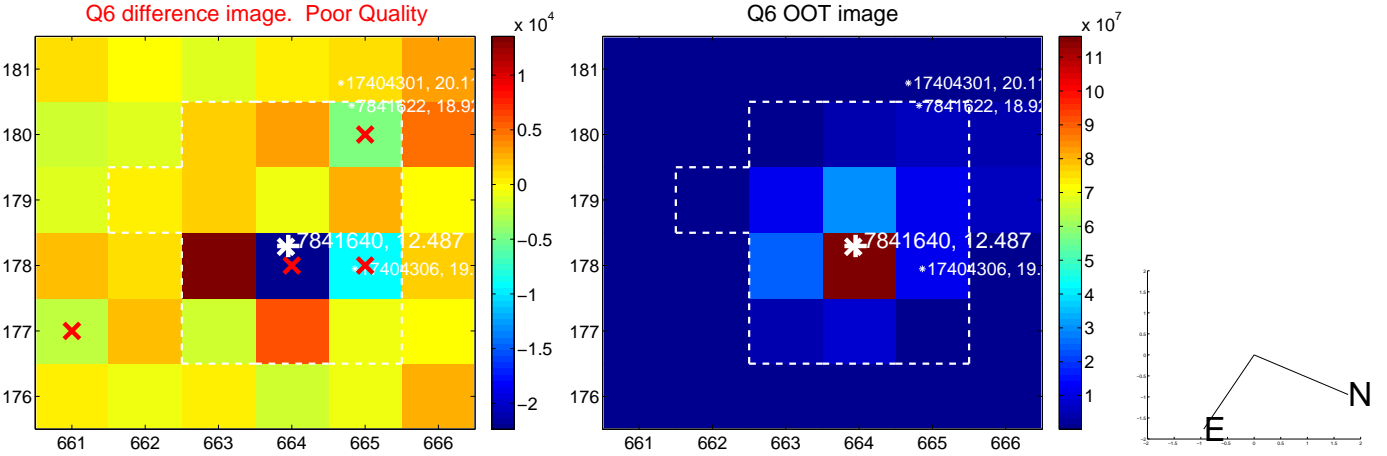
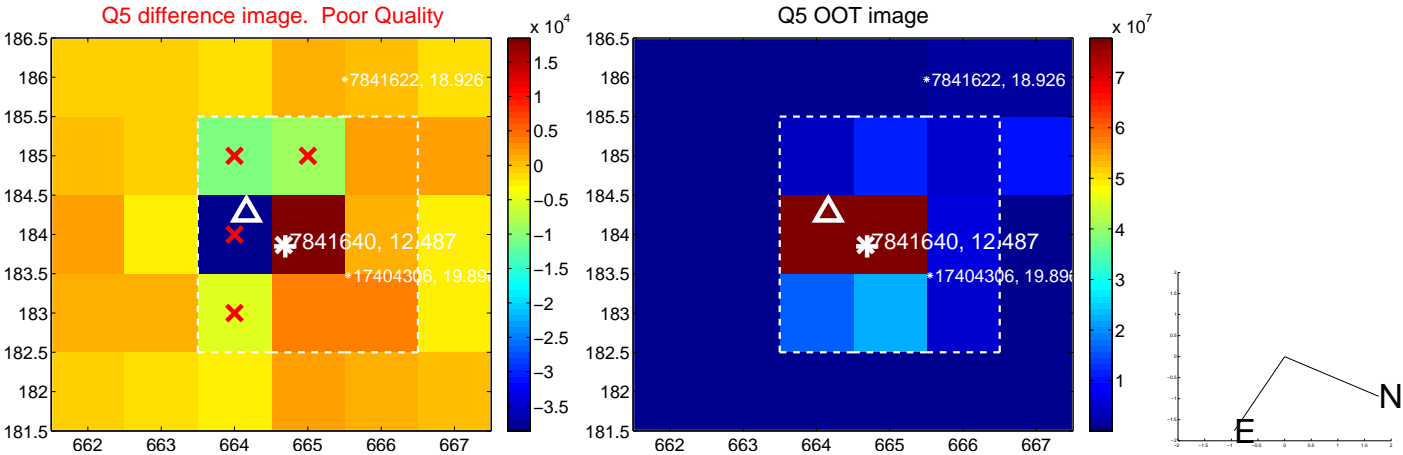


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

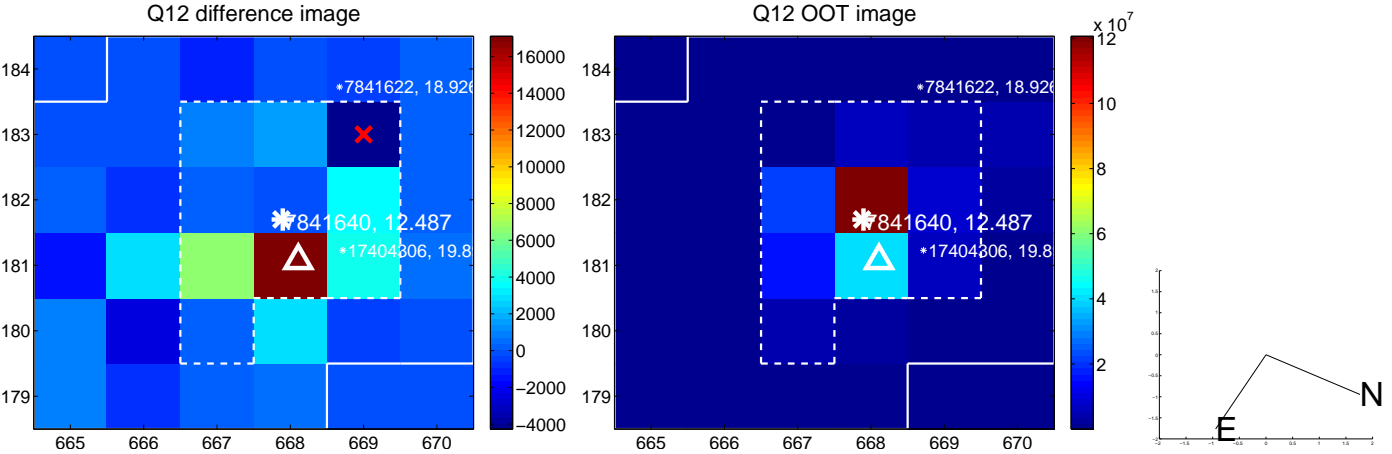
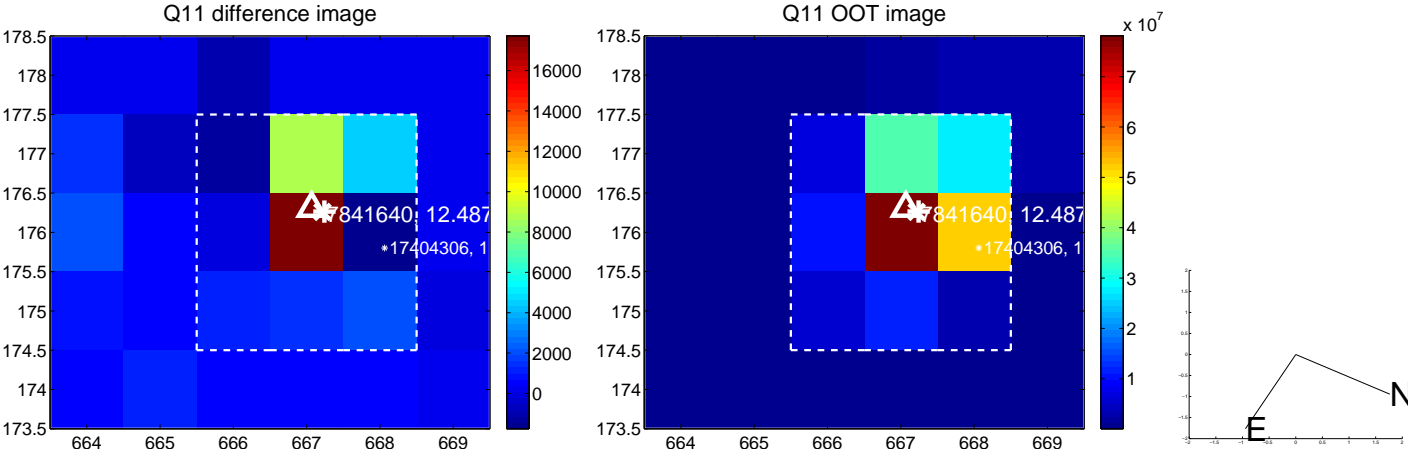
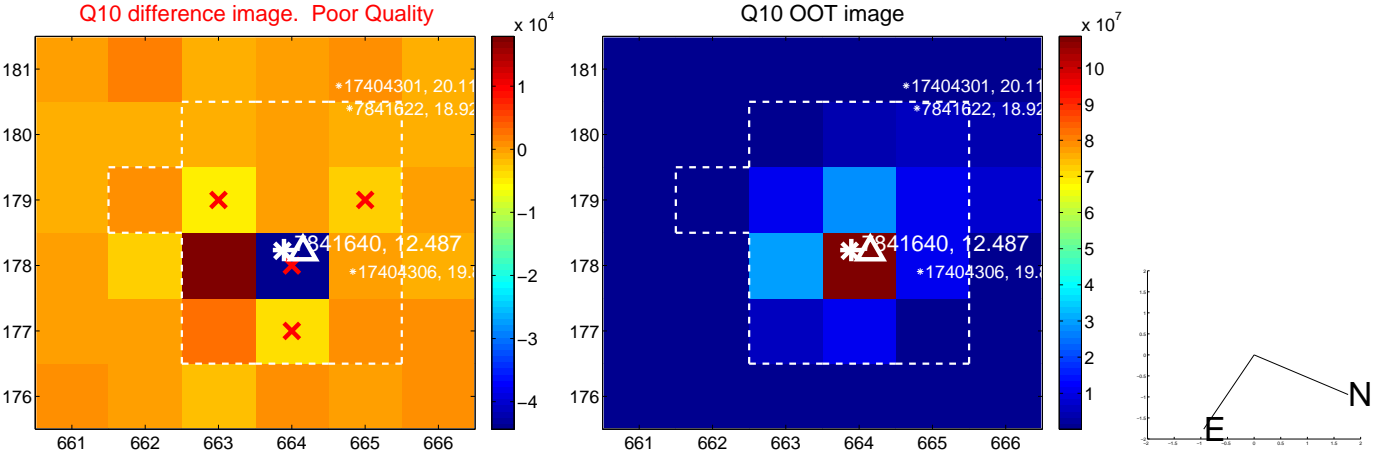
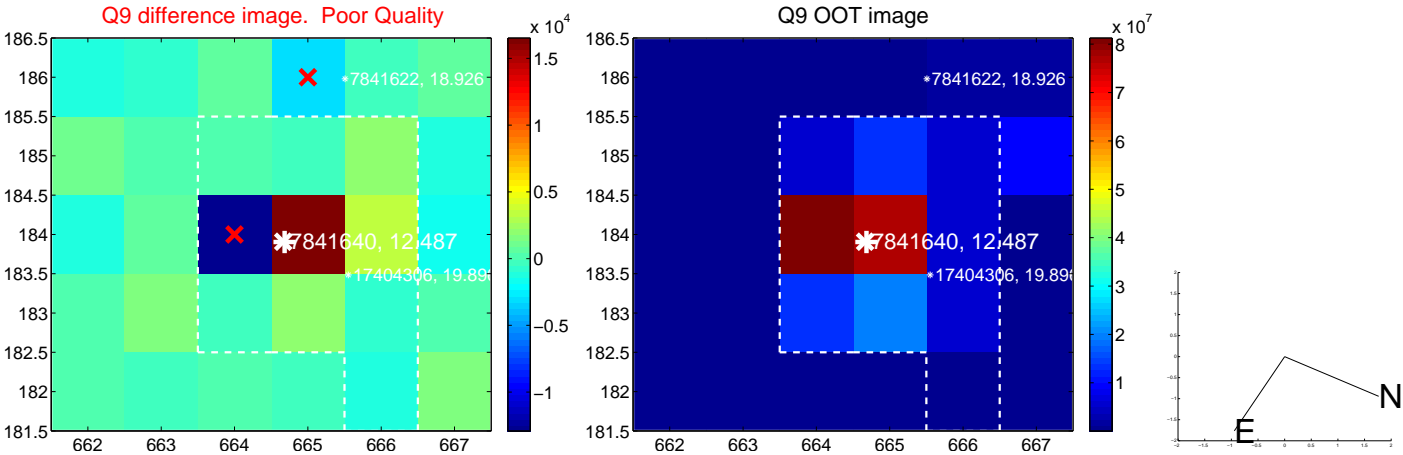
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



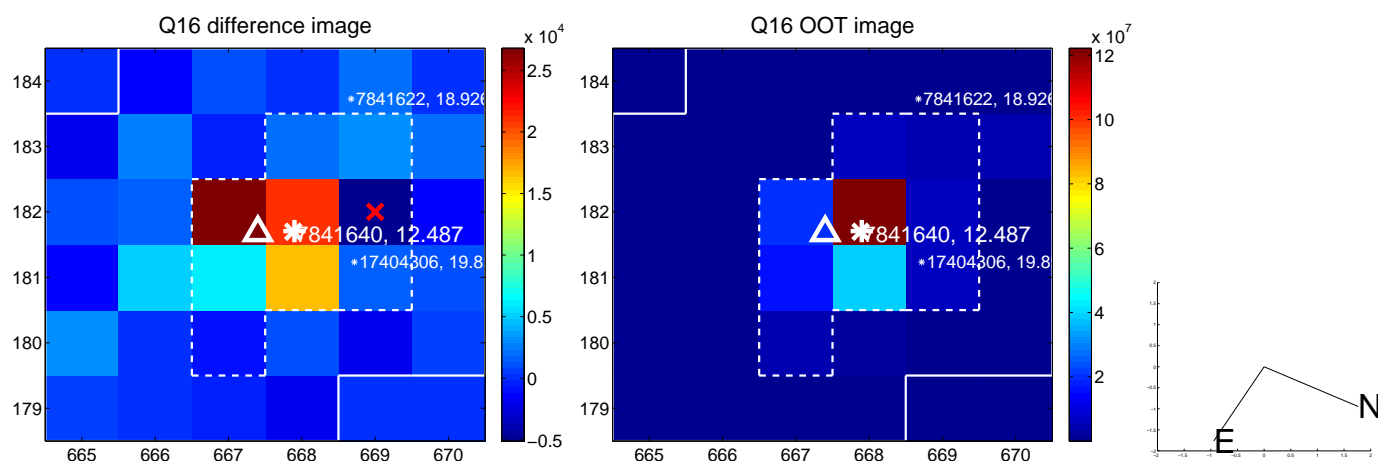
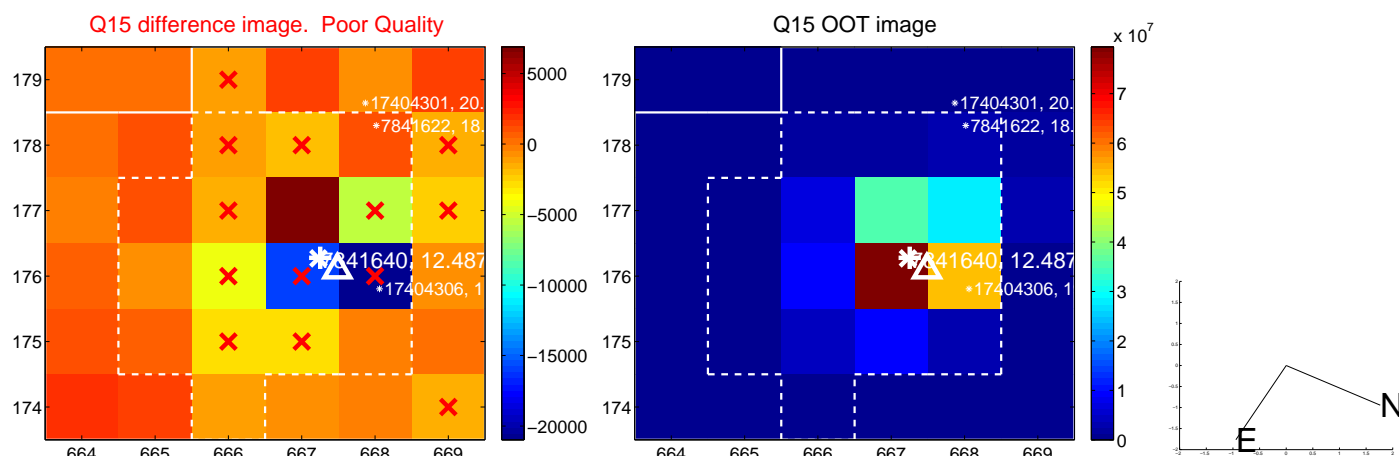
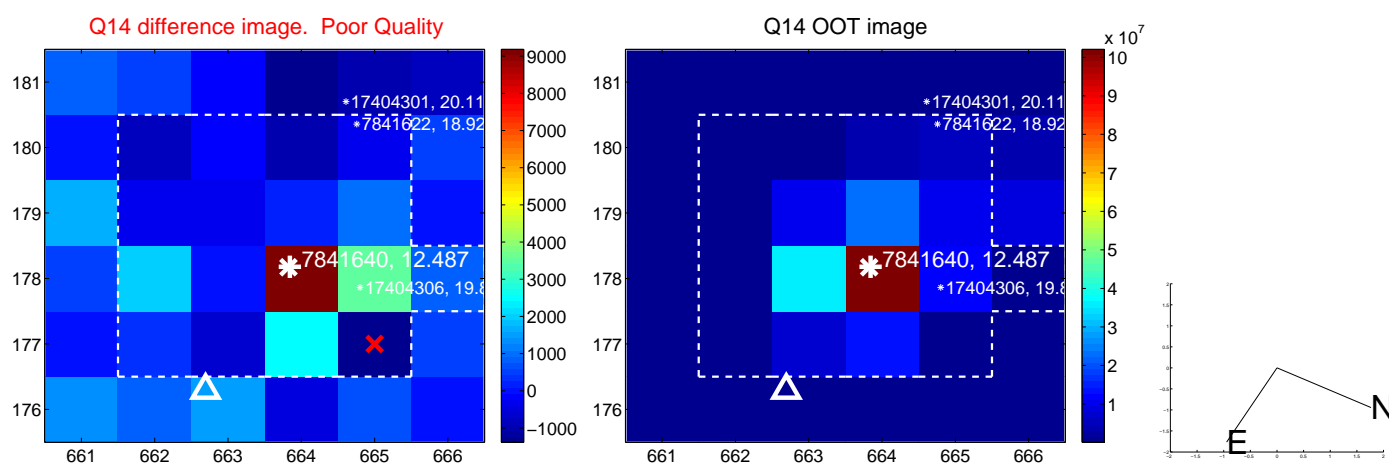
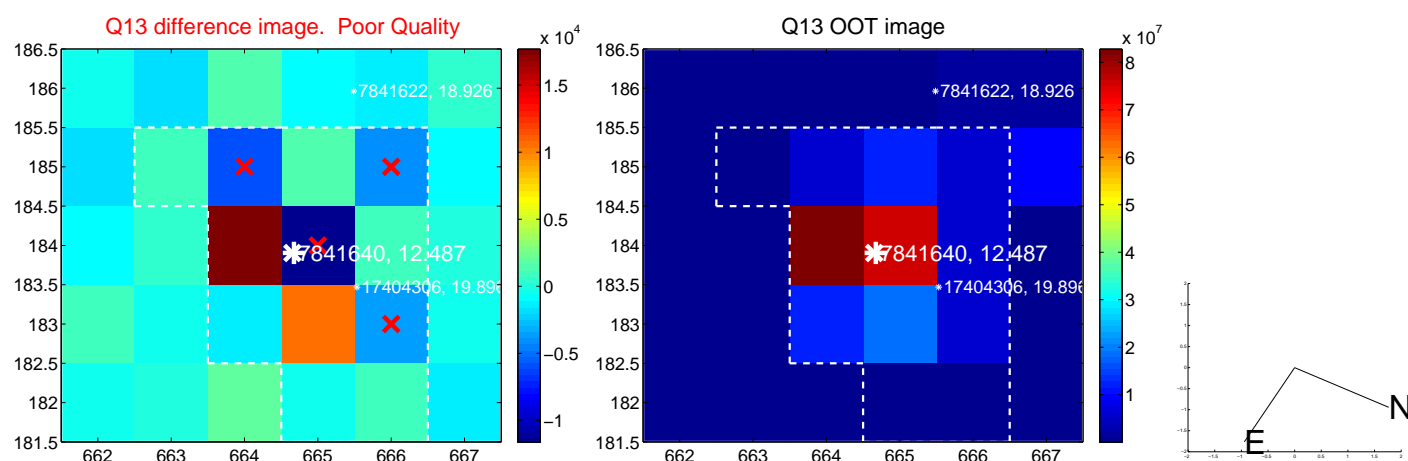
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



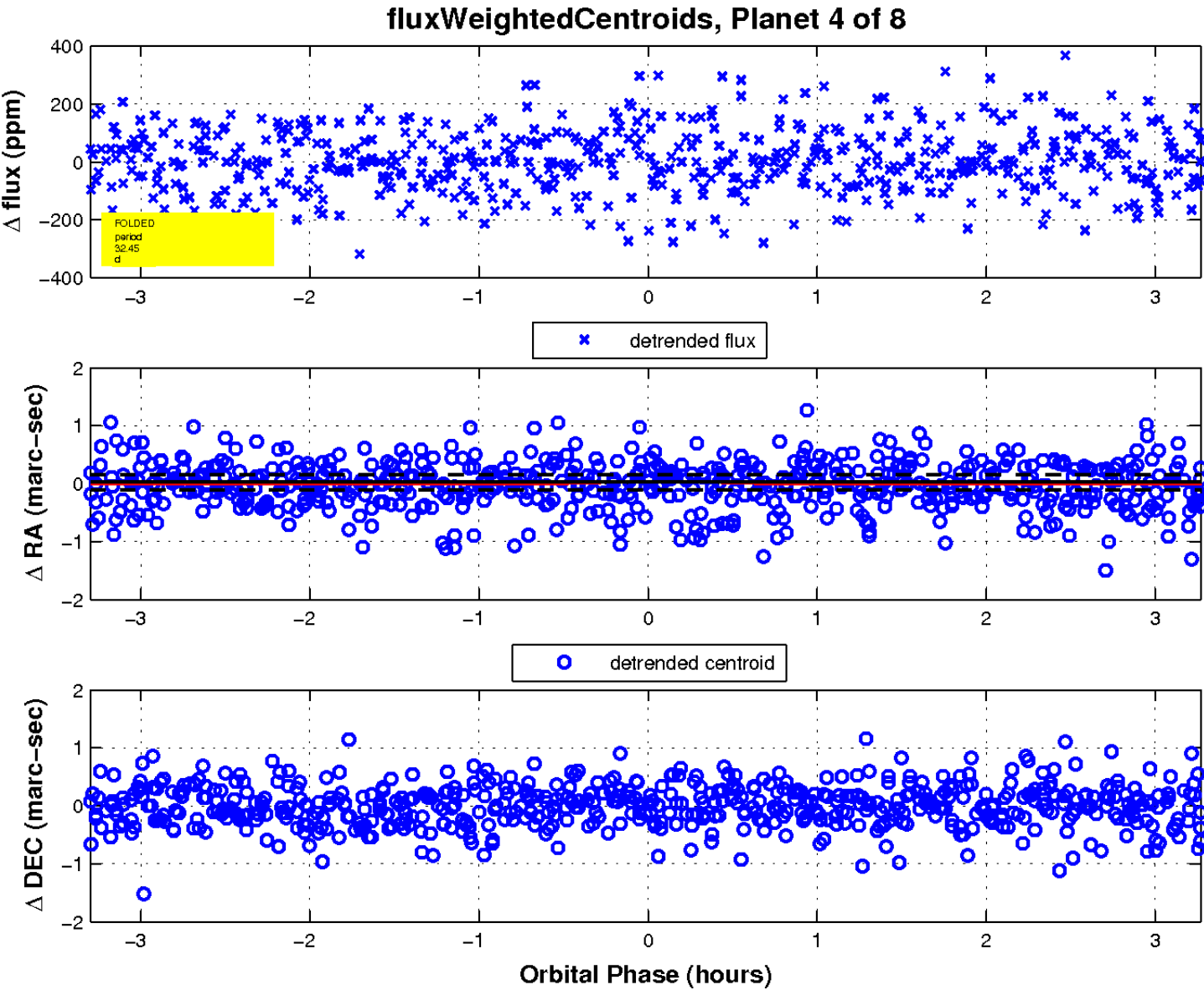
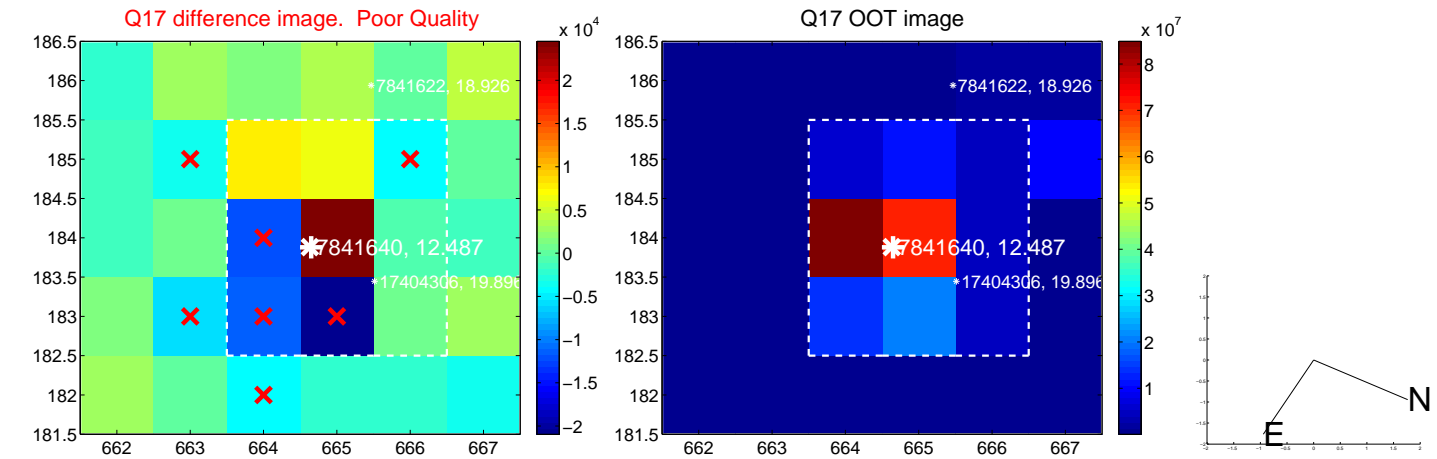
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

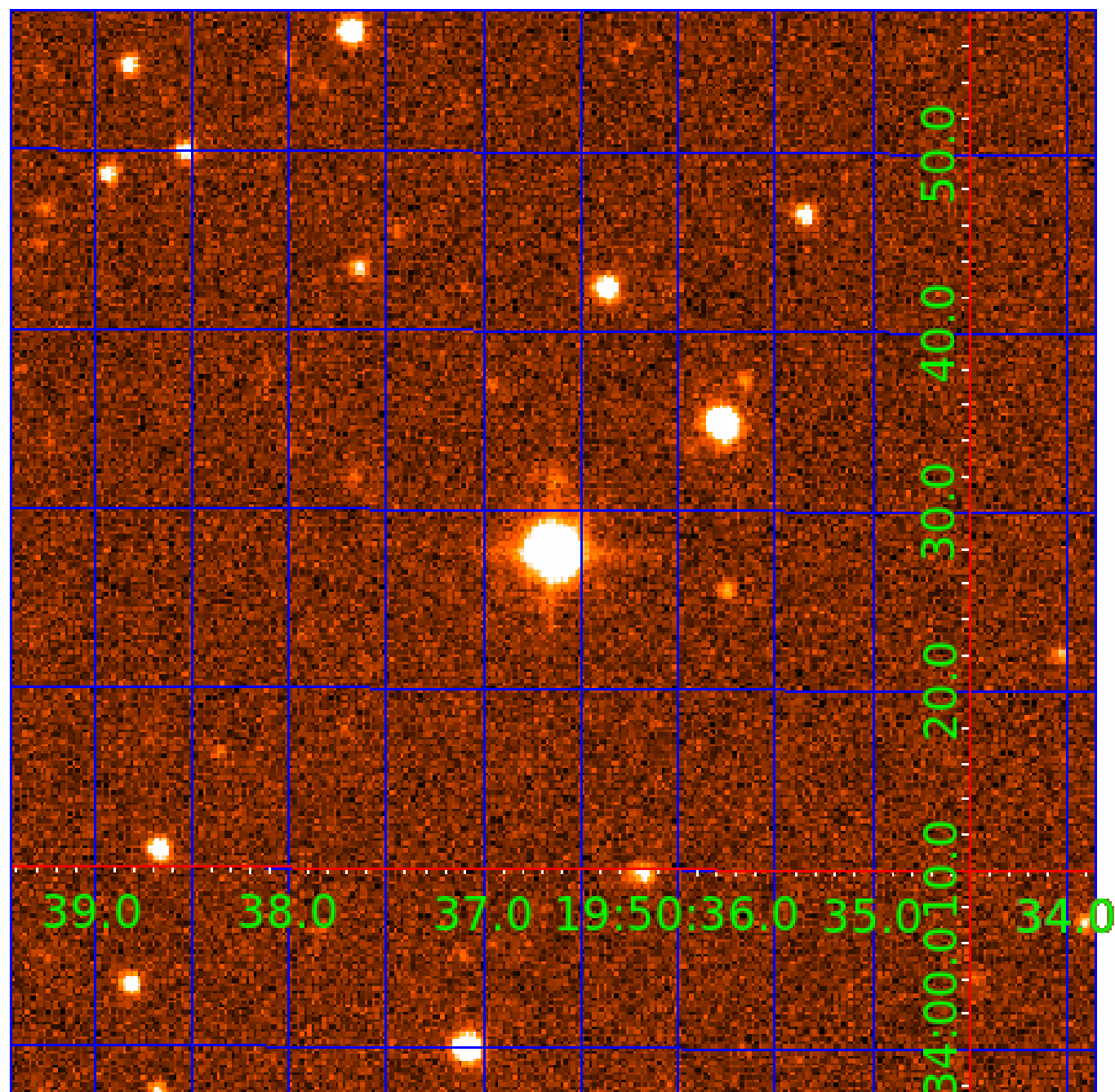


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007841640

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007841640-01	OBS	No	1.716619	132.218549	3.5	12.498	8.5	2.2	2.77	6886	0.54	13678.52
007841640-03	OBS	No	79.992434	176.697388	225.8	3.966	16.8	15.2	2.77	6886	4.85	81.57
007841640-04	OBS	No	32.448993	134.941138	264.1	1.099	15.4	11.6	2.77	6886	4.61	271.65
007841640-05	OBS	No	79.660484	146.688969	232.0	3.286	14.9	13.1	2.77	6886	4.72	82.03
007841640-06	OBS	No	15.842593	142.699268	143.4	2.022	13.4	13.3	2.77	6886	3.36	706.59
007841640-07	OBS	No	46.025128	133.576410	153.7	5.475	12.8	11.3	2.77	6886	3.97	170.46
007841640-08	OBS	No	22.135742	152.672679	123.6	3.686	13.0	12.1	2.77	6886	3.48	452.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007841640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007841640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007841640-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

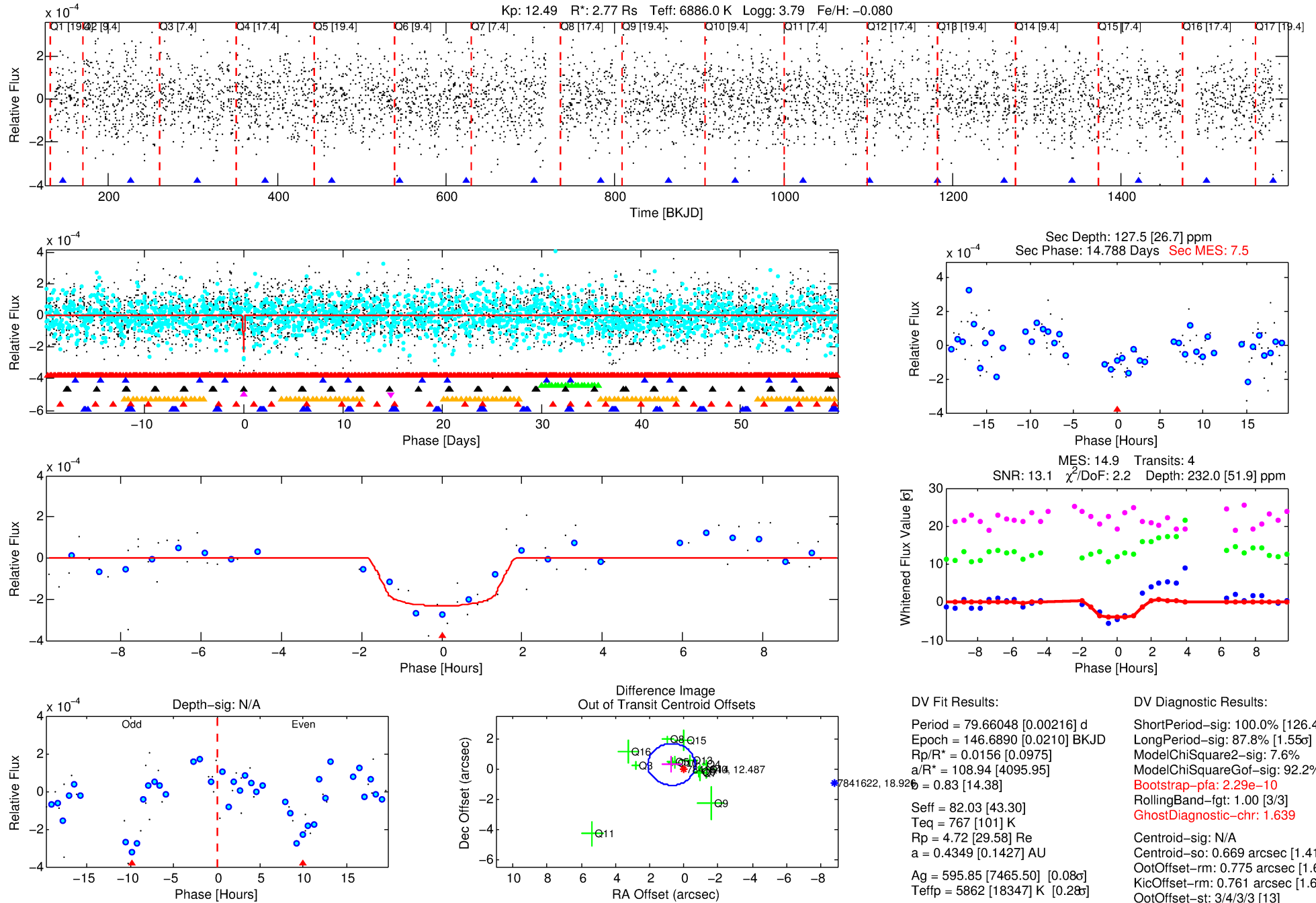
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007841640-05

No Significant Match Found

DV One-Page Summary

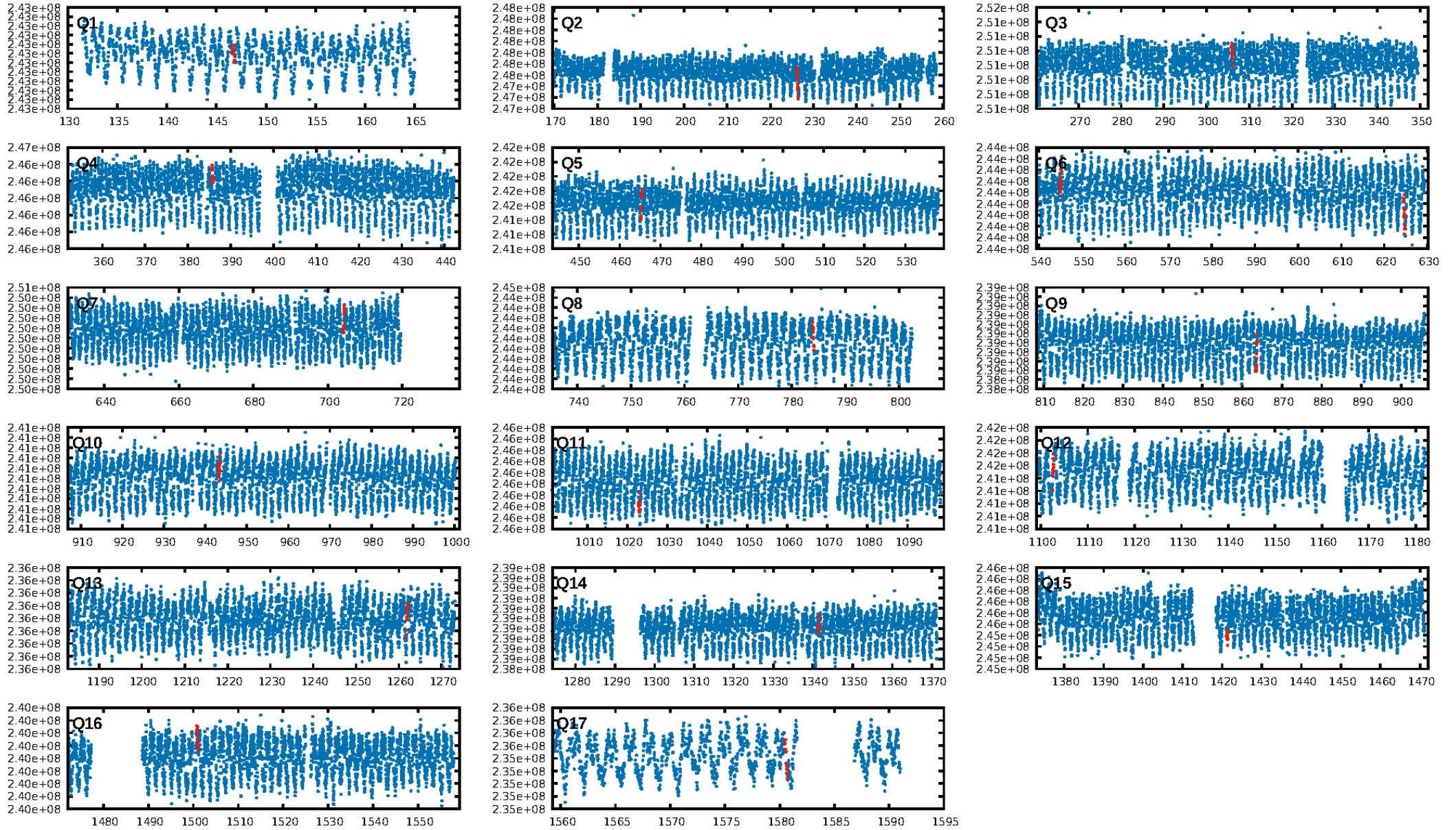
KIC: 7841640 Candidate: 5 of 8 Period: 79.660 d



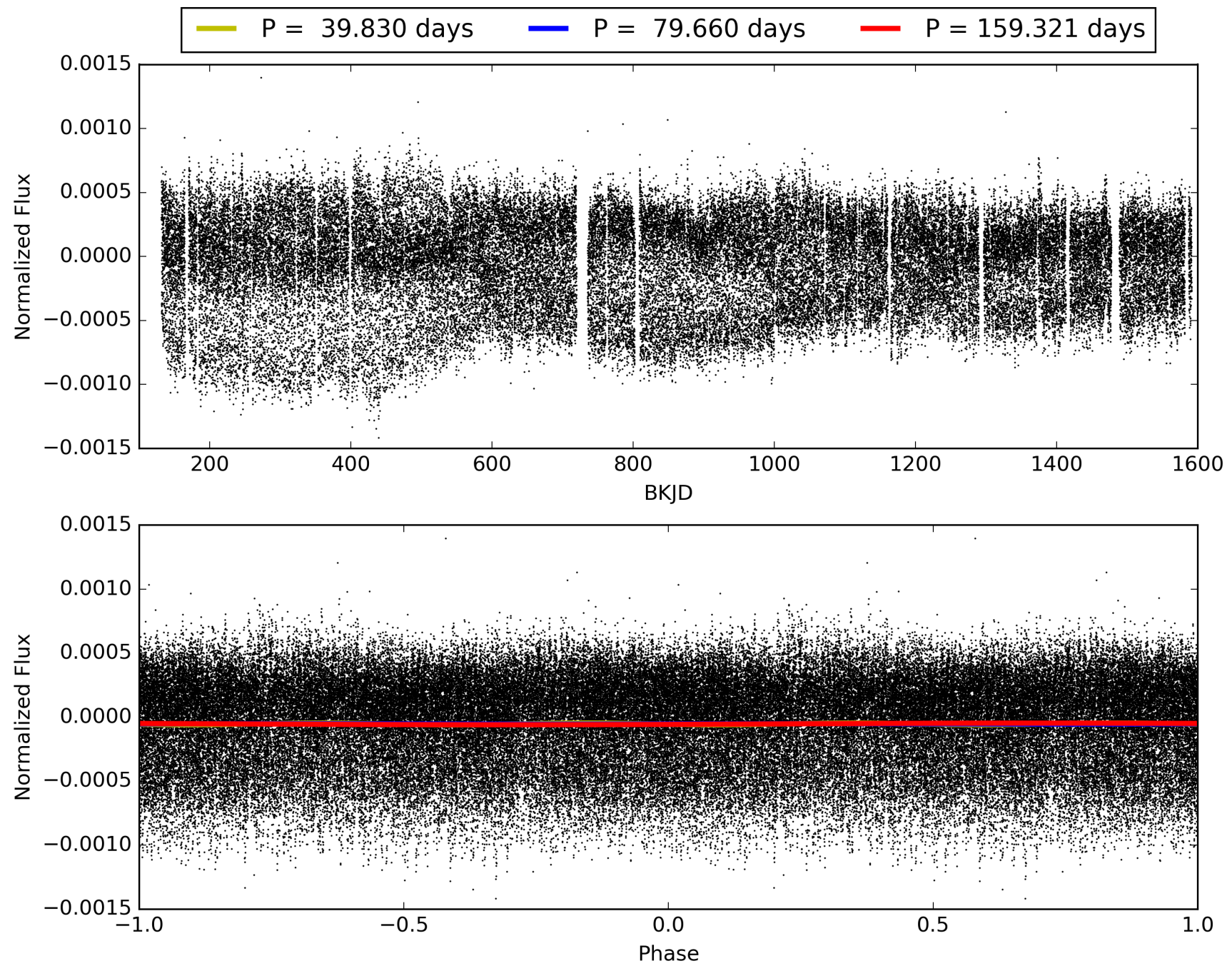
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:22 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007841640-05, PDC Light Curves

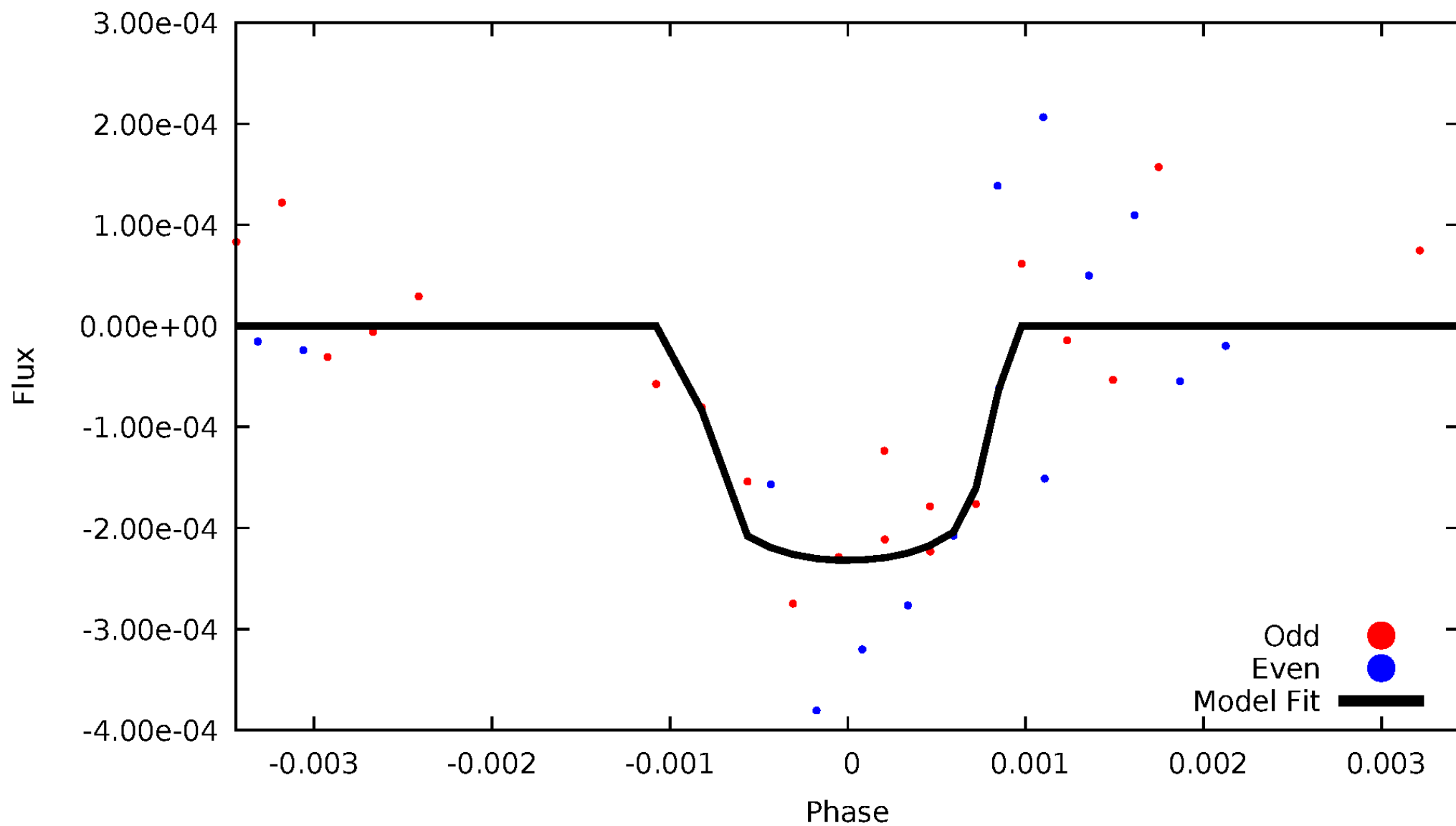


TCE 007841640-05



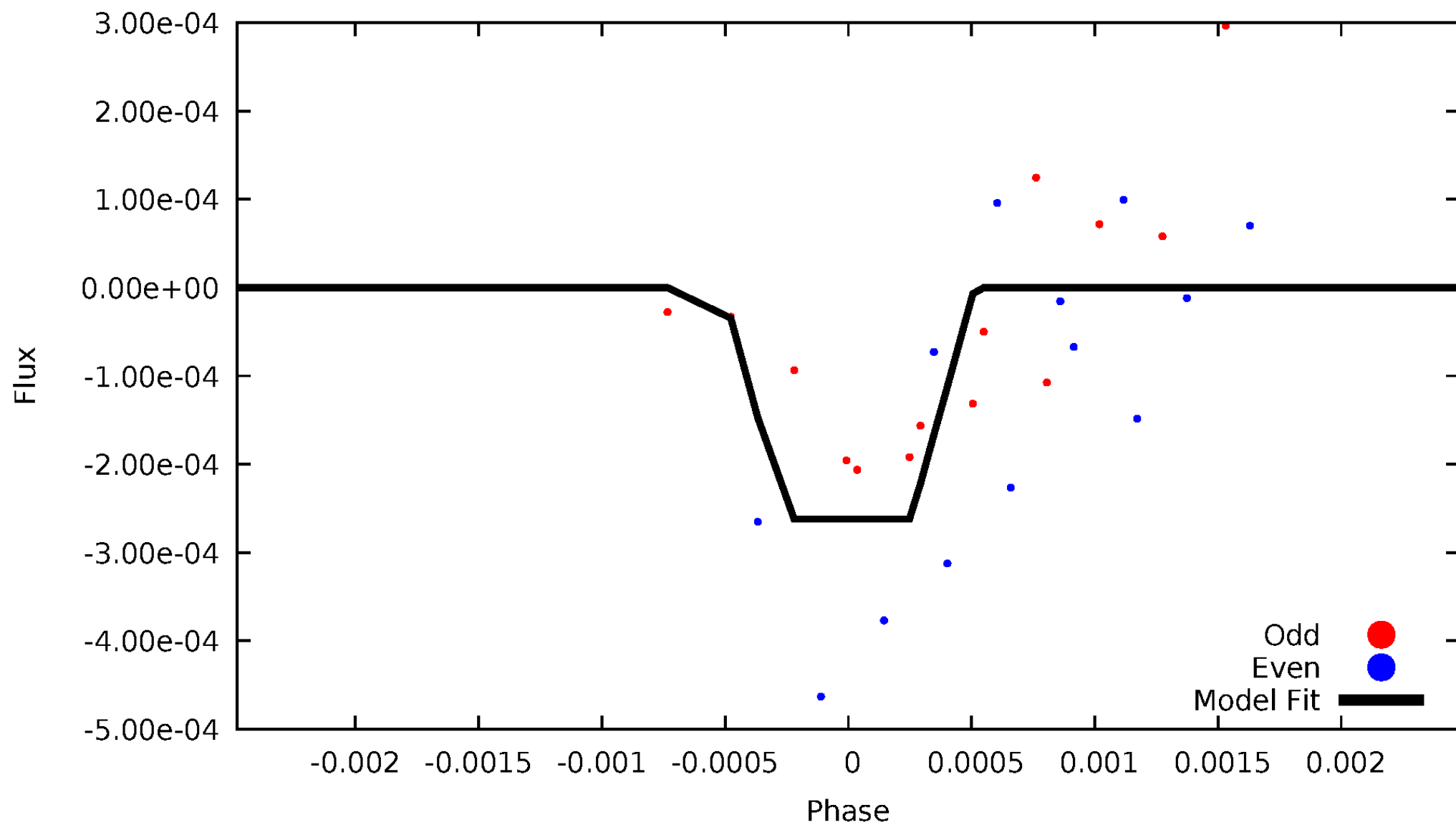
DV Odd/Even

TCE 007841640-05



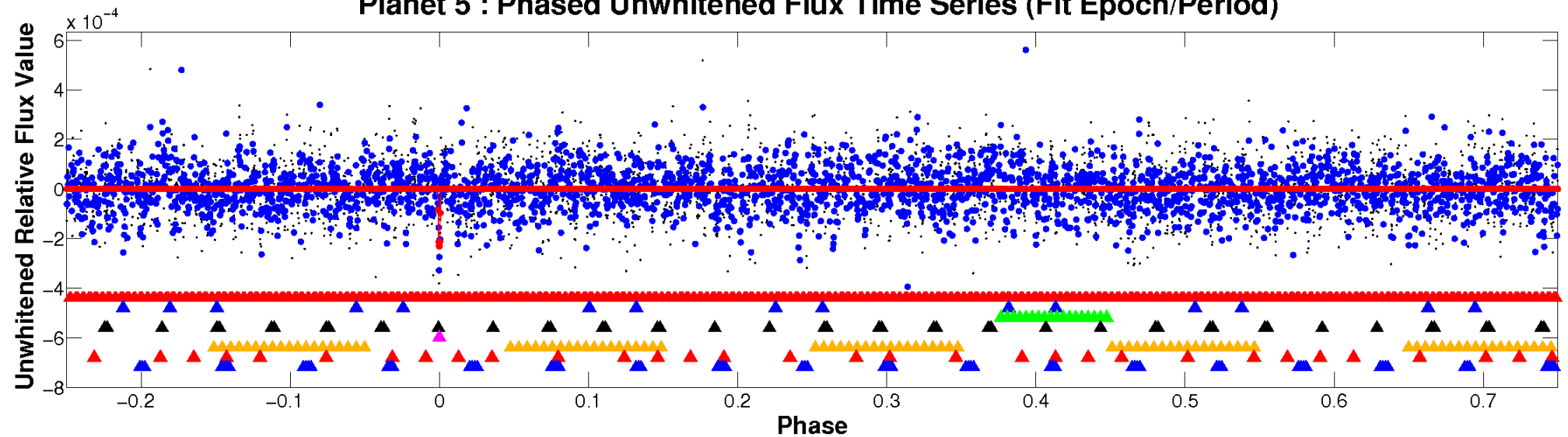
ALT Odd/Even

TCE 007841640-05

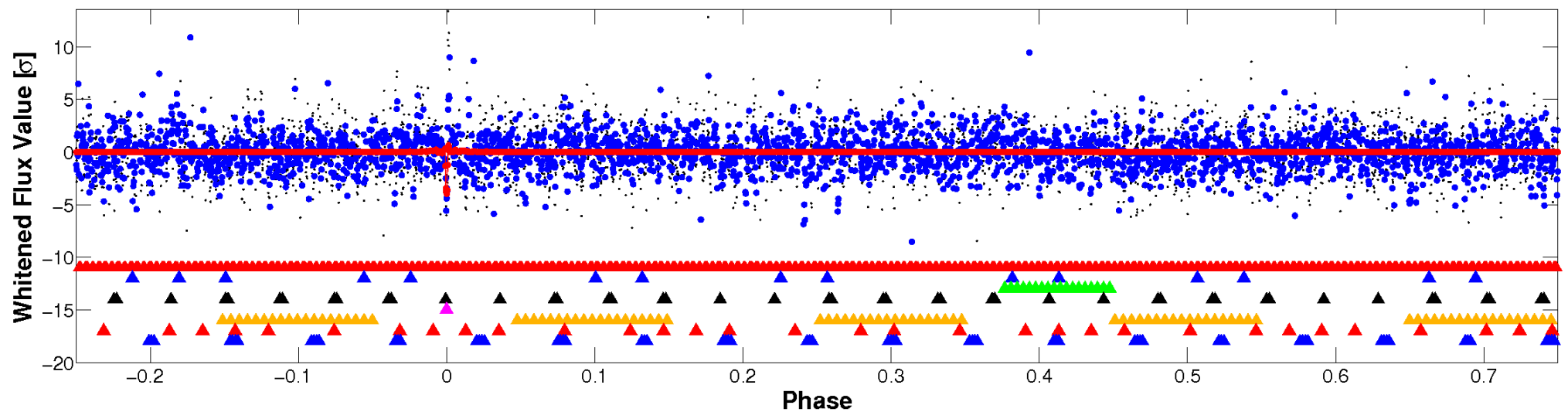


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

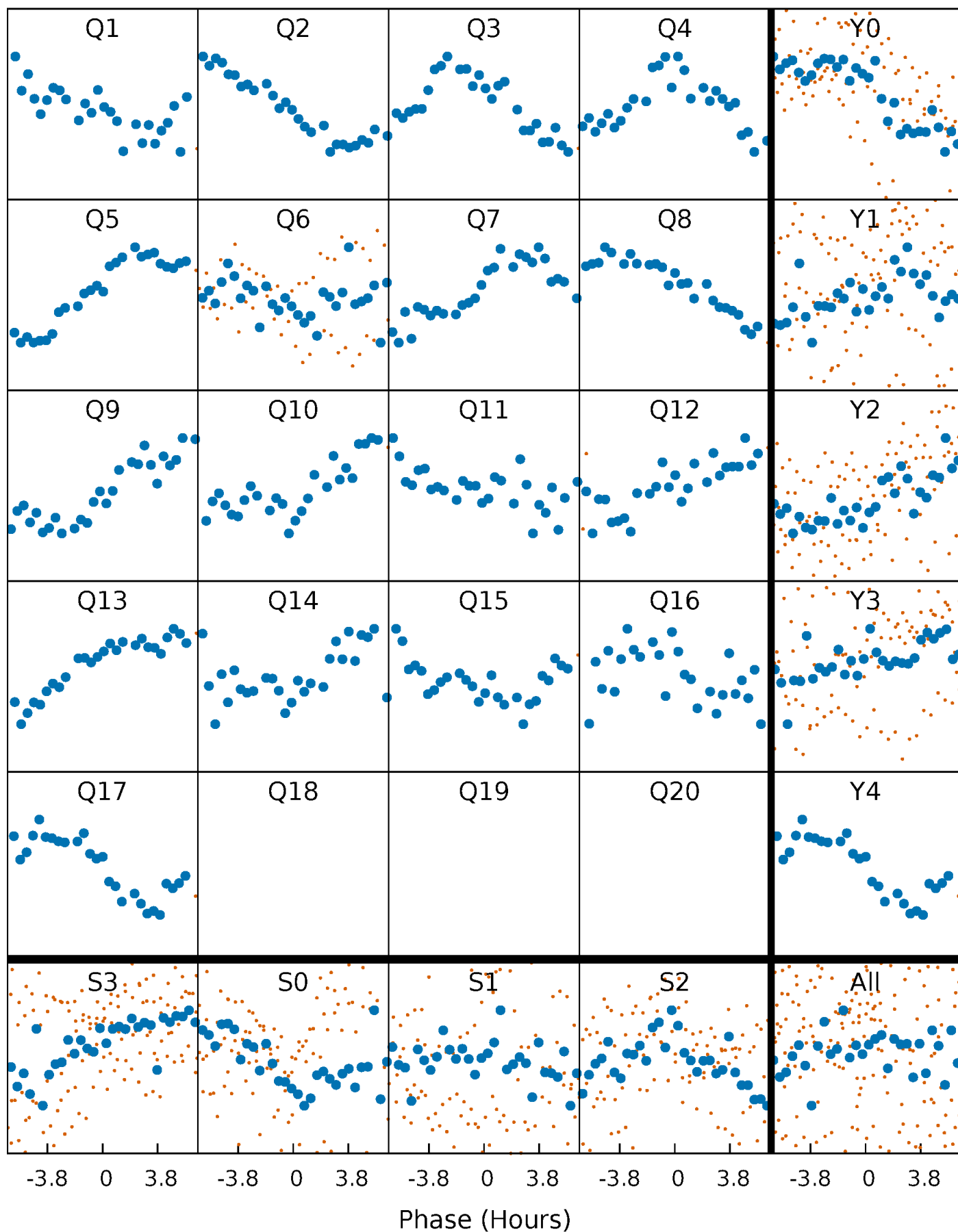


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



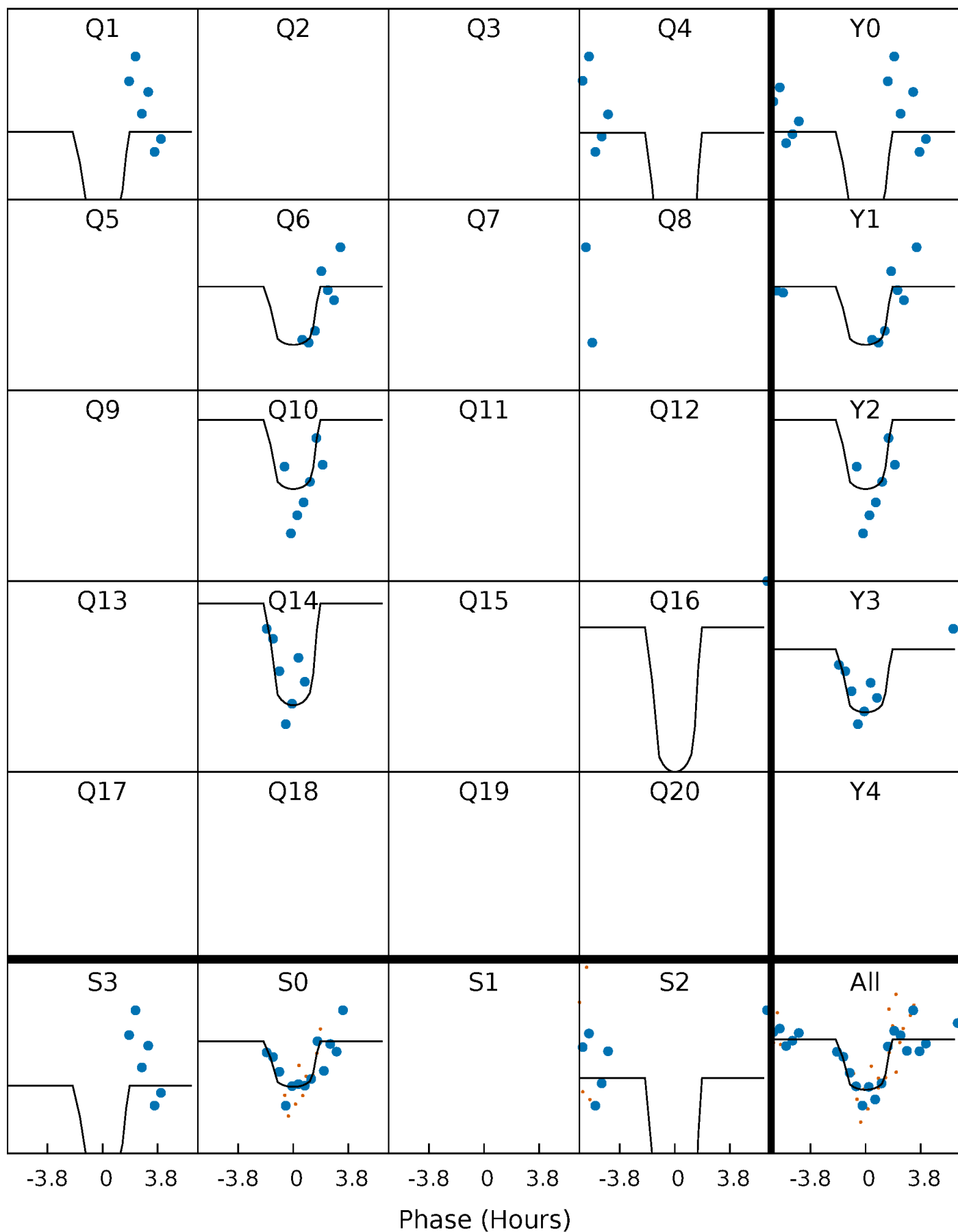
PDC Quarter-Phased Transit Curves

TCE 007841640-05 P= 79.660484 Days $T_0=146.688969$ (BKJD)



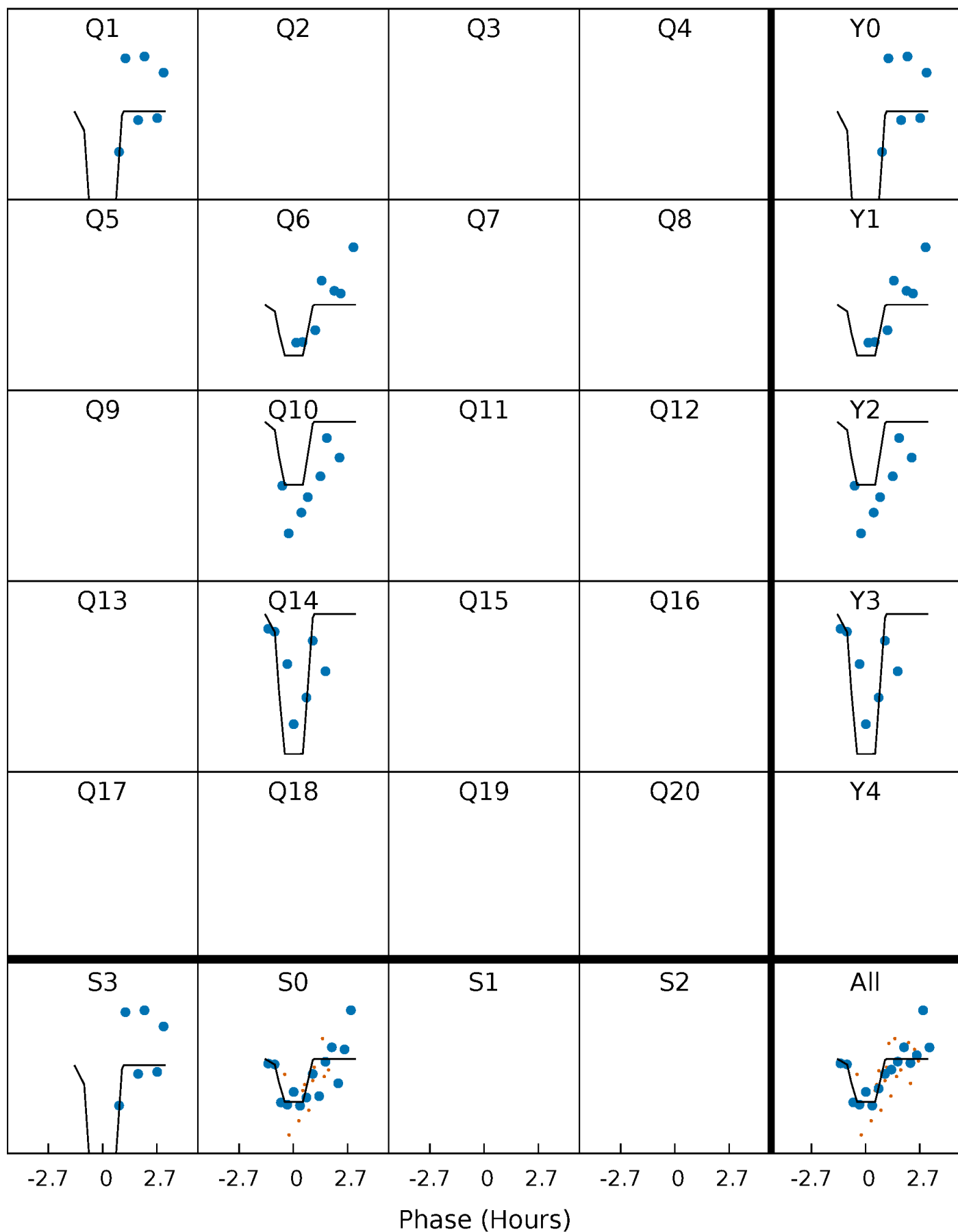
DV Quarter-Phased Transit Curves

TCE 007841640-05 P= 79.660484 Days $T_0=146.688969$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

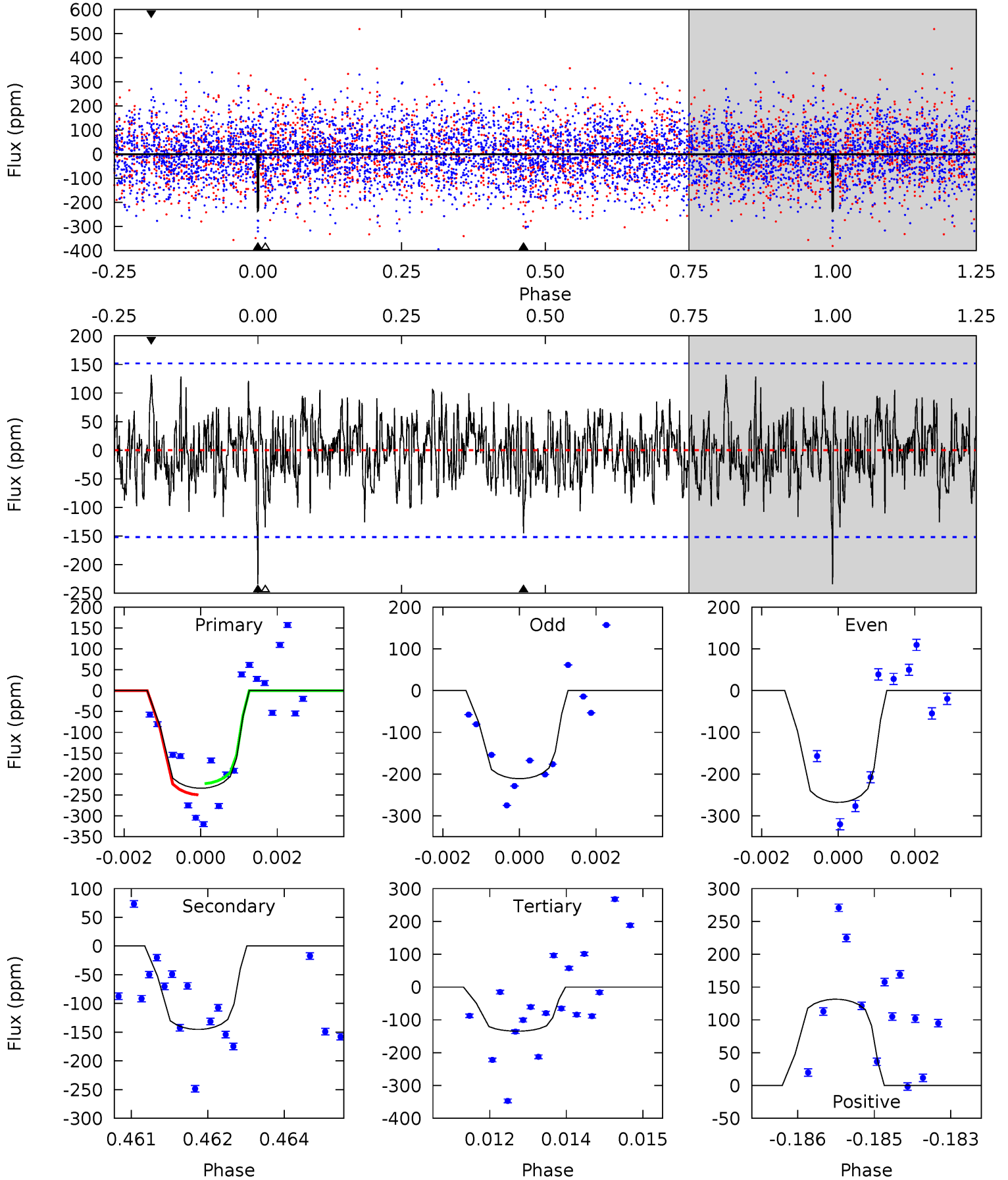
TCE 007841640-05 P= 79.656034 Days $T_0=146.728389$ (BKJD)



DV Model-Shift Uniqueness Test

007841640-05, P = 79.660484 Days, E = 67.028485 Days

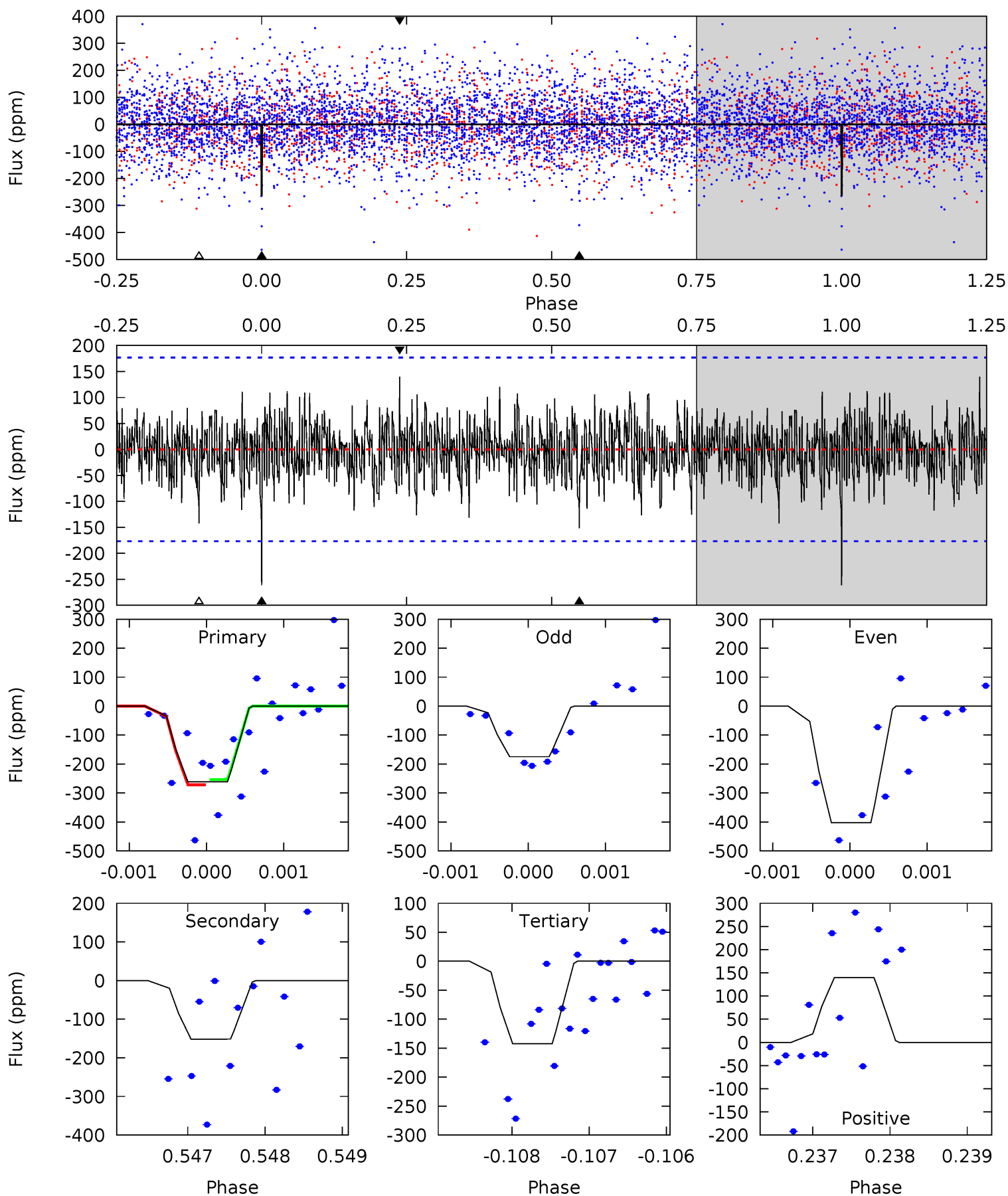
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.28	5.14	4.76	4.65	5.37	3.17	1.45	3.52	3.63	0.38	0.49	1.01	1.03	0.36	0.43



Alt Model-Shift Uniqueness Test

007841640-05, P = 79.656034 Days, E = 67.072355 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.09	4.69	4.40	4.33	5.47	3.31	1.28	3.68	3.76	0.29	0.36	3.45	1.37	0.35	0.26



Stellar Parameters For KIC 007841640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6886^{+163}_{-245}	$3.789^{+0.292}_{-0.097}$	$-0.080^{+0.250}_{-0.300}$	$2.775^{+0.428}_{-0.998}$	$1.726^{+0.163}_{-0.353}$	$0.114^{+0.237}_{-0.036}$
	+2%/-4%	+8%/-3%	+312%/-375%	+15%/-36%	+9%/-20%	+208%/-32%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007841640-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-145 ± 28	$19.93^{+20.31}_{-14.07}$	1048^{+67}_{-98}	3327^{+1771}_{-578}	37^{+411}_{-27}
Alt.	-152 ± 32	$21.40^{+22.54}_{-15.04}$	1052^{+67}_{-82}	3309^{+1822}_{-588}	34^{+354}_{-26}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

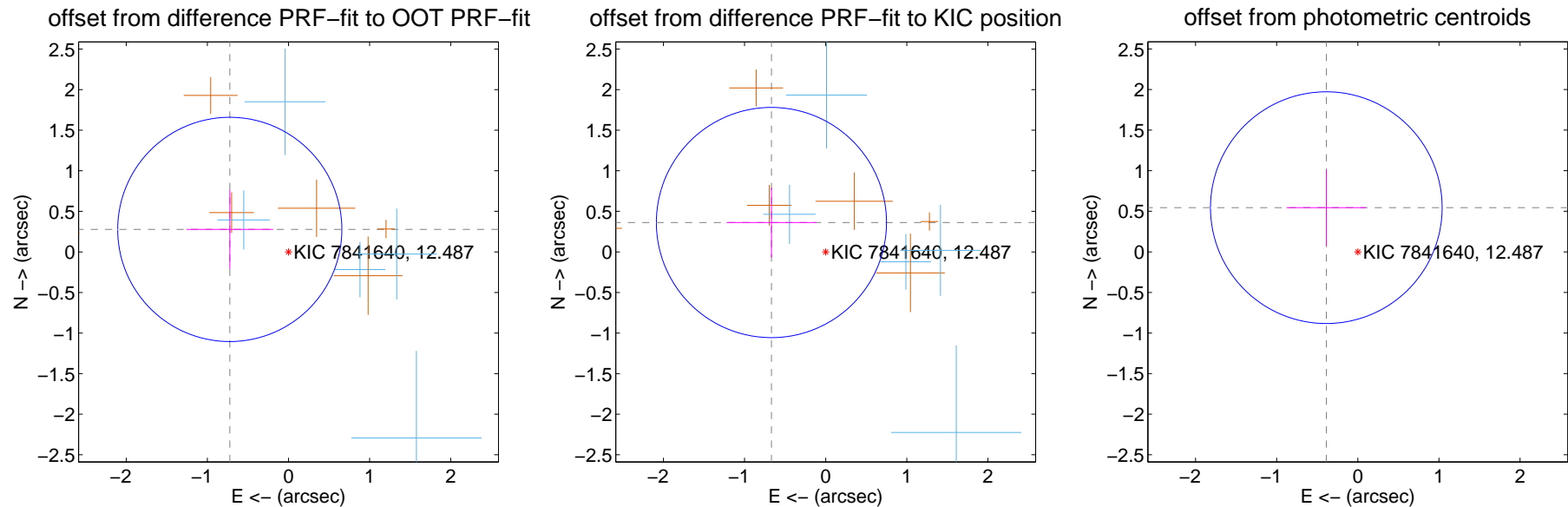
DV Centroid Data

Supplemental centroid analysis for 007841640-05. Kepler magnitude: 12.49. Transit SNR 13.14

There are 5 quarters with good PRF difference image offsets

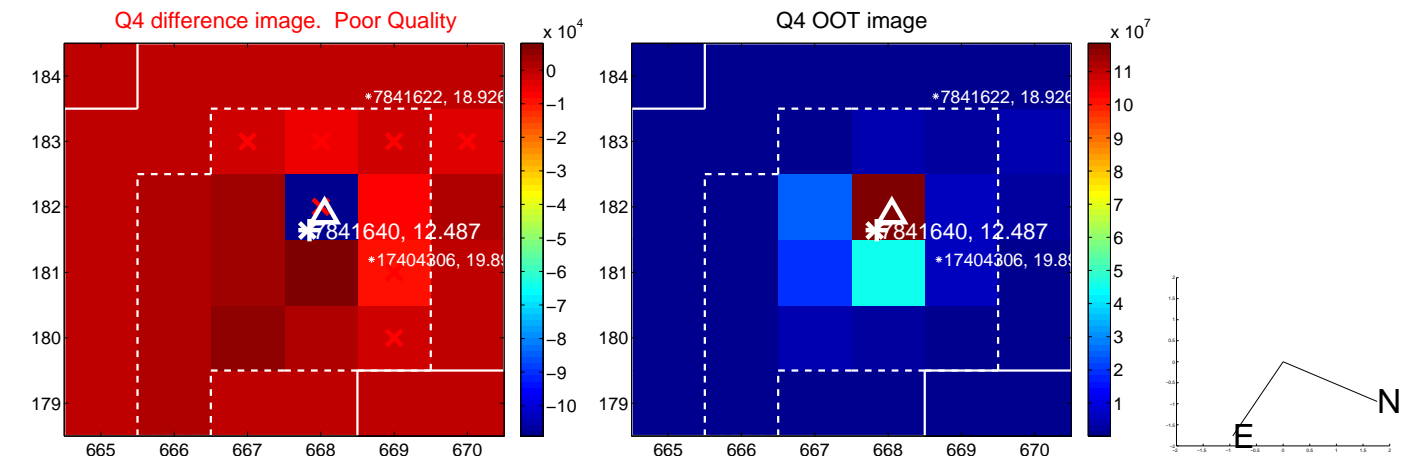
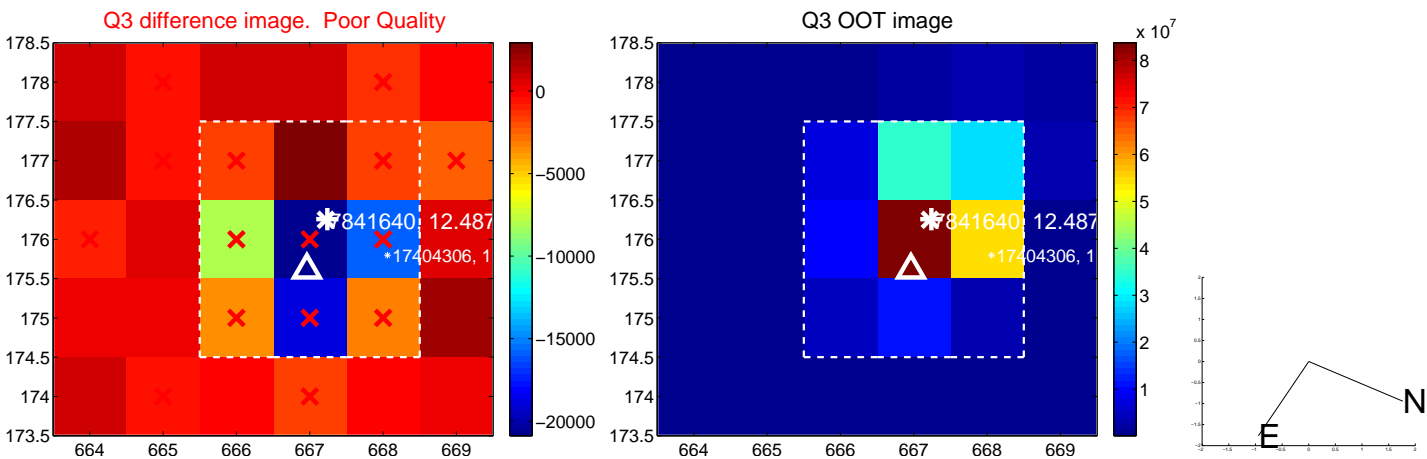
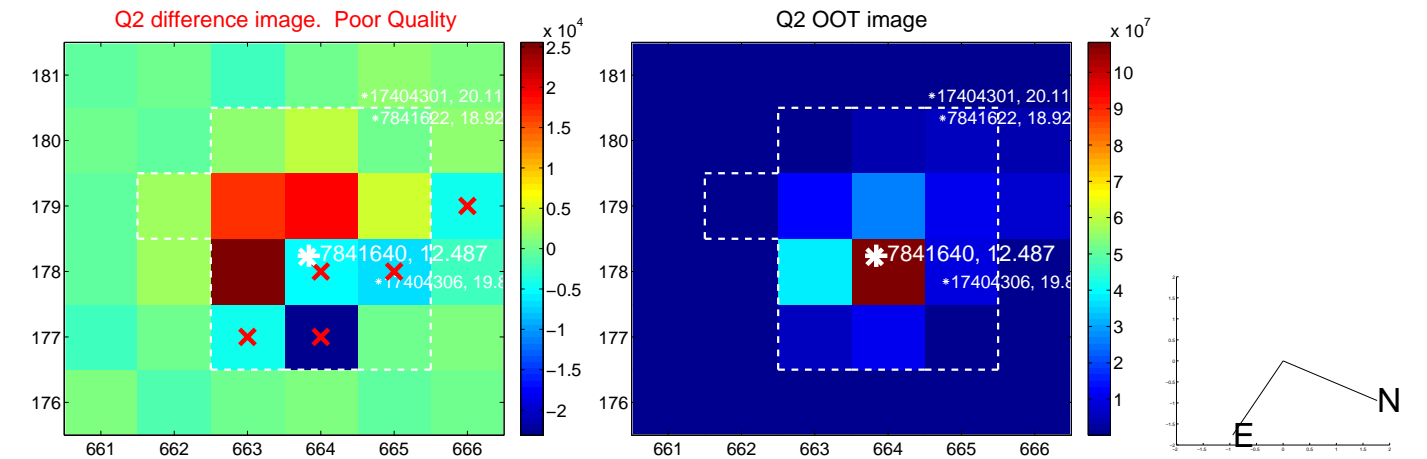
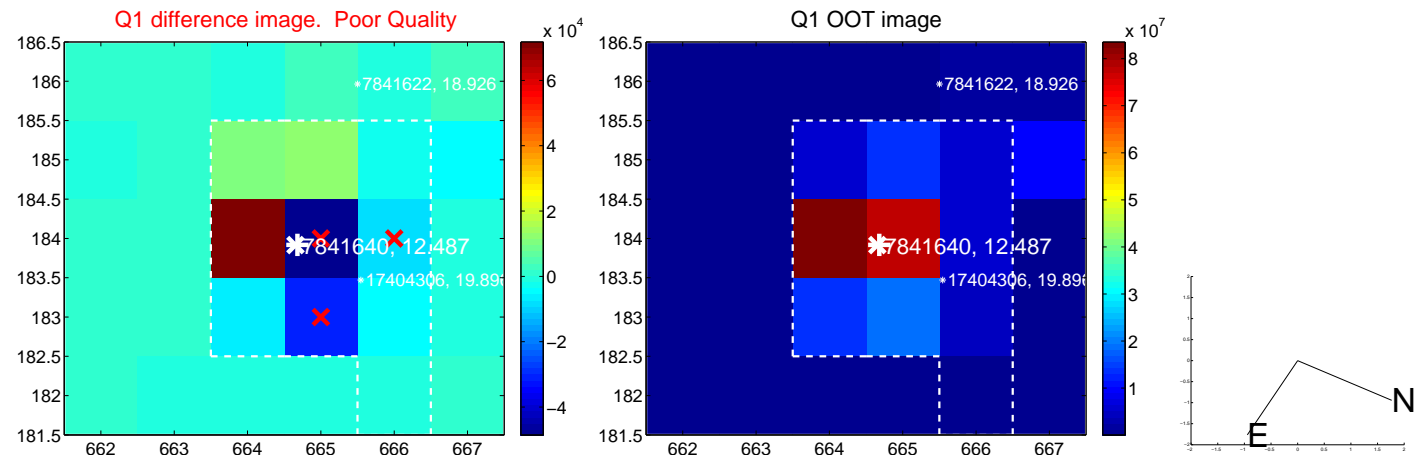
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.775 ± 0.461	1.68	0.724 ± 0.534	0.277 ± 0.486
PRF-fit source offset from KIC position	0.761 ± 0.473	1.61	0.669 ± 0.554	0.362 ± 0.430
photometric centroid source offset	0.67 ± 0.48	1.41	0.39 ± 0.49	0.54 ± 0.47

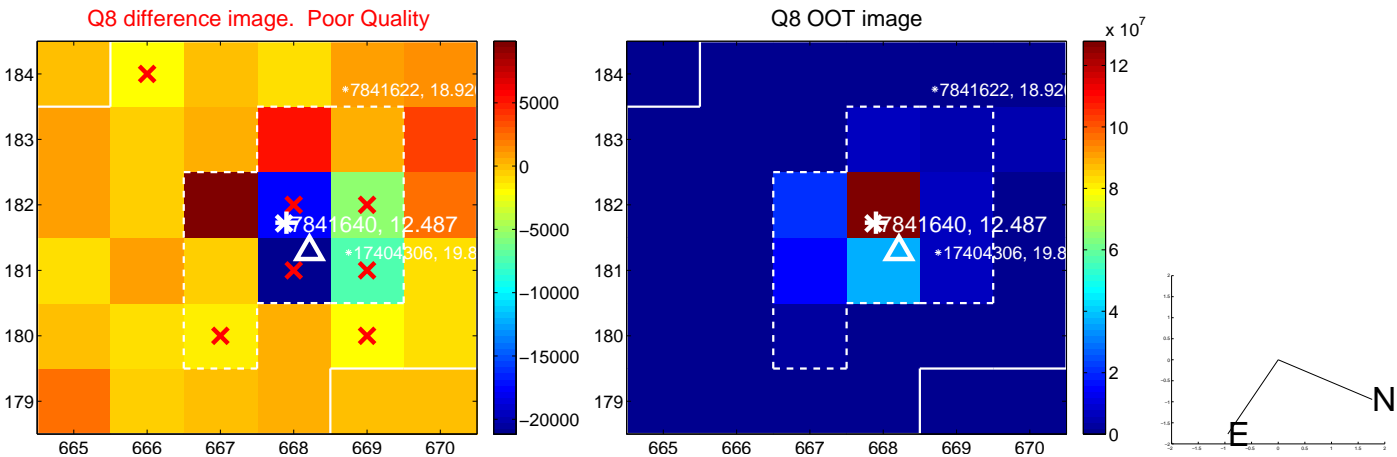
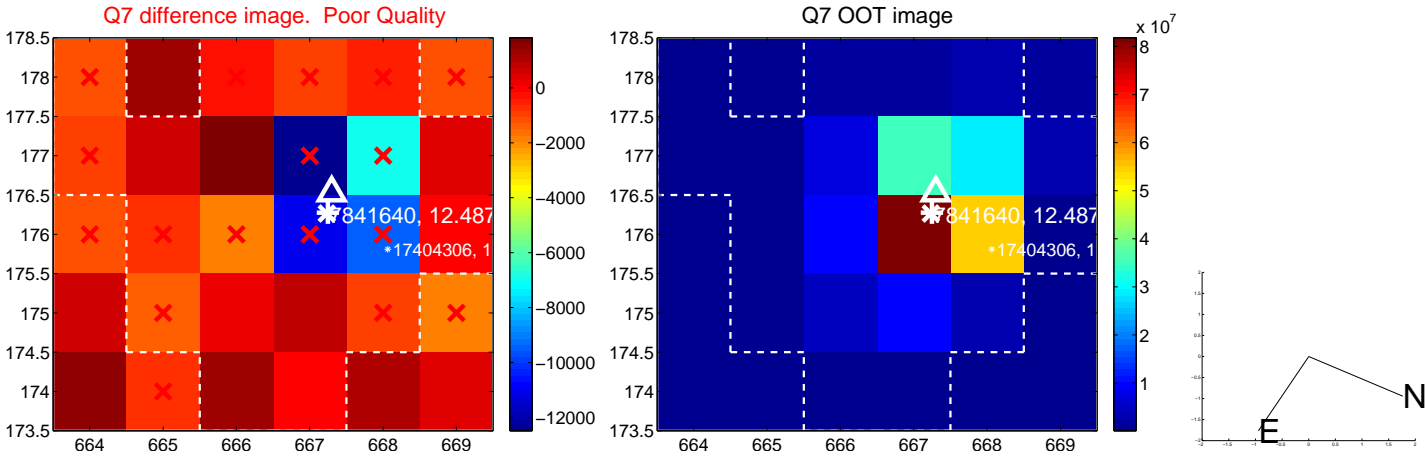
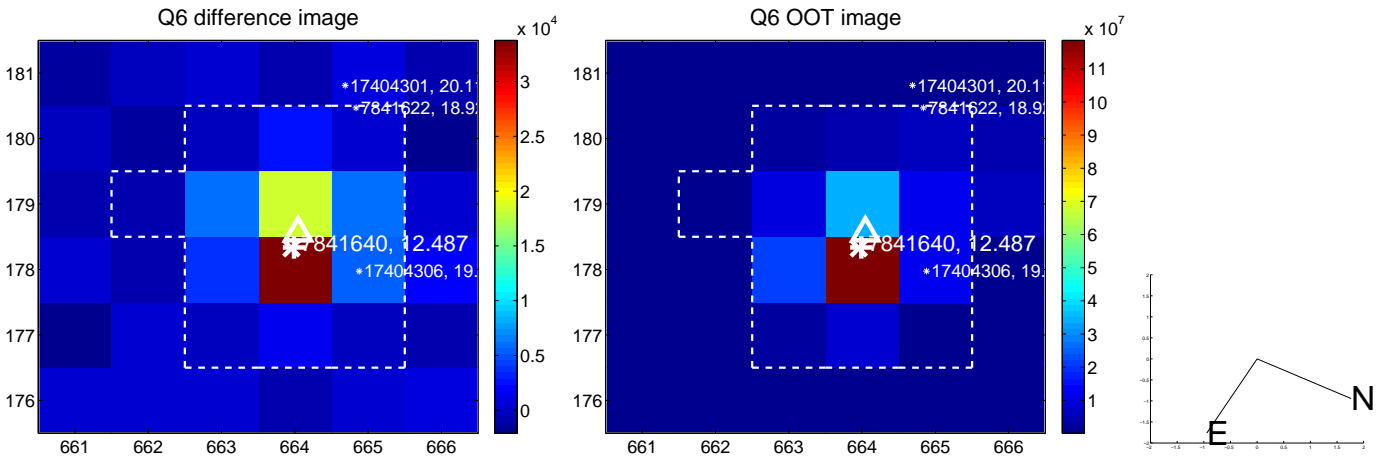
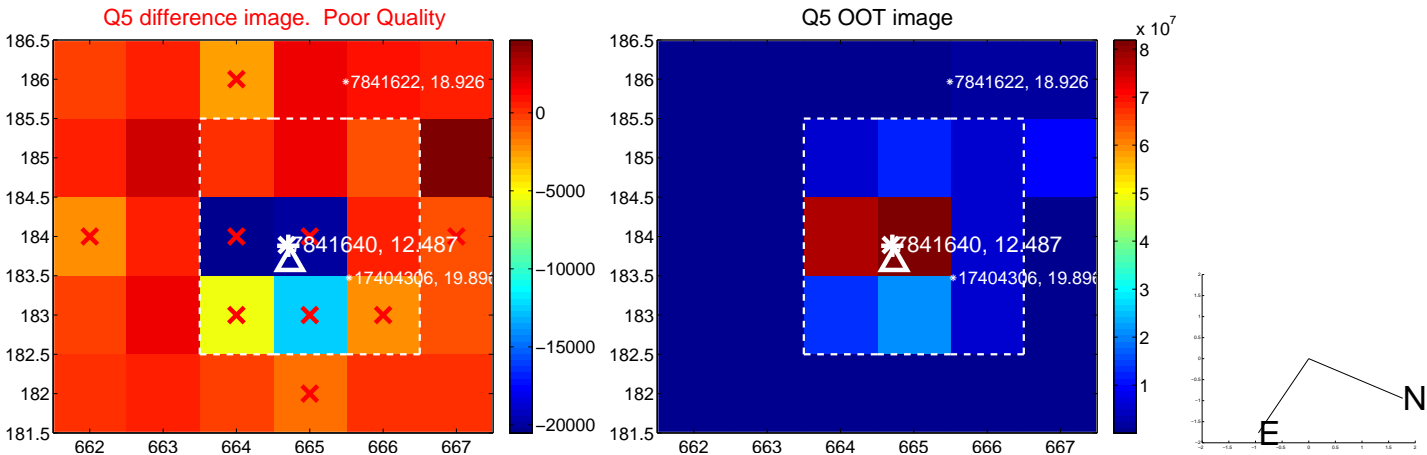


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

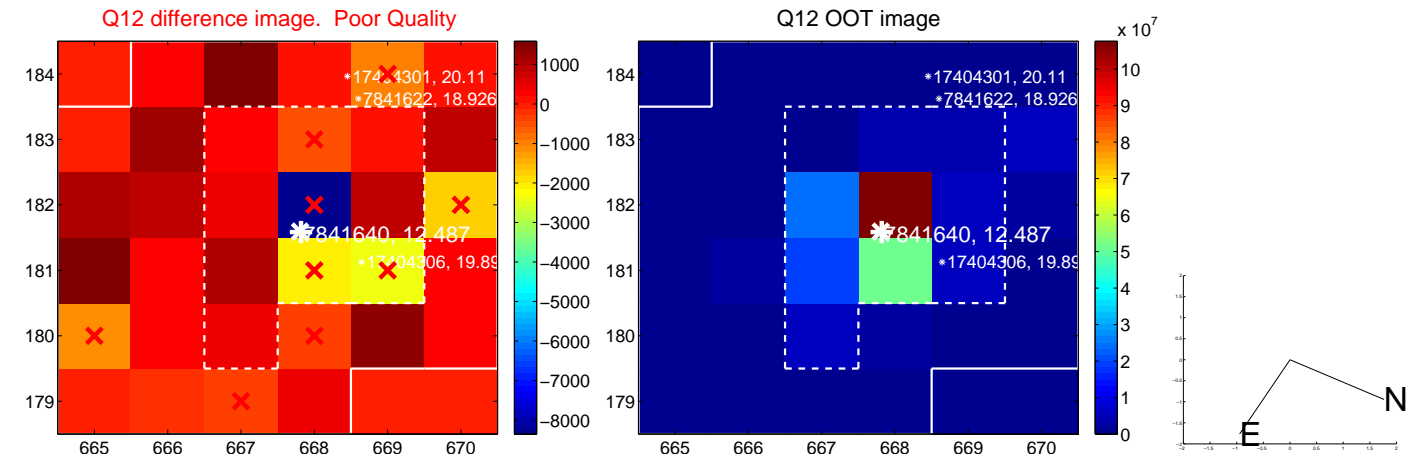
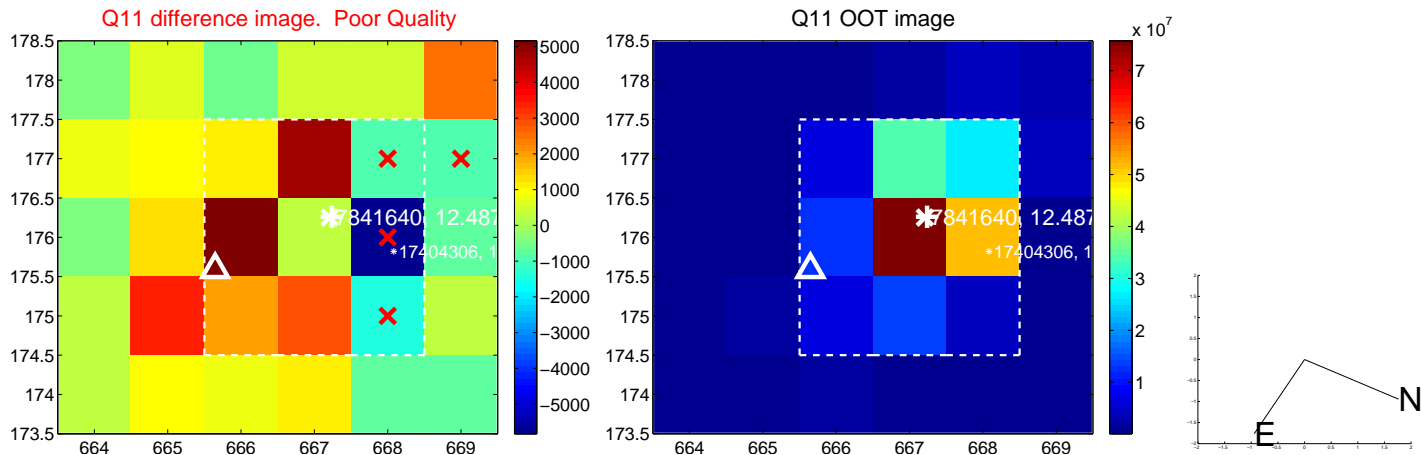
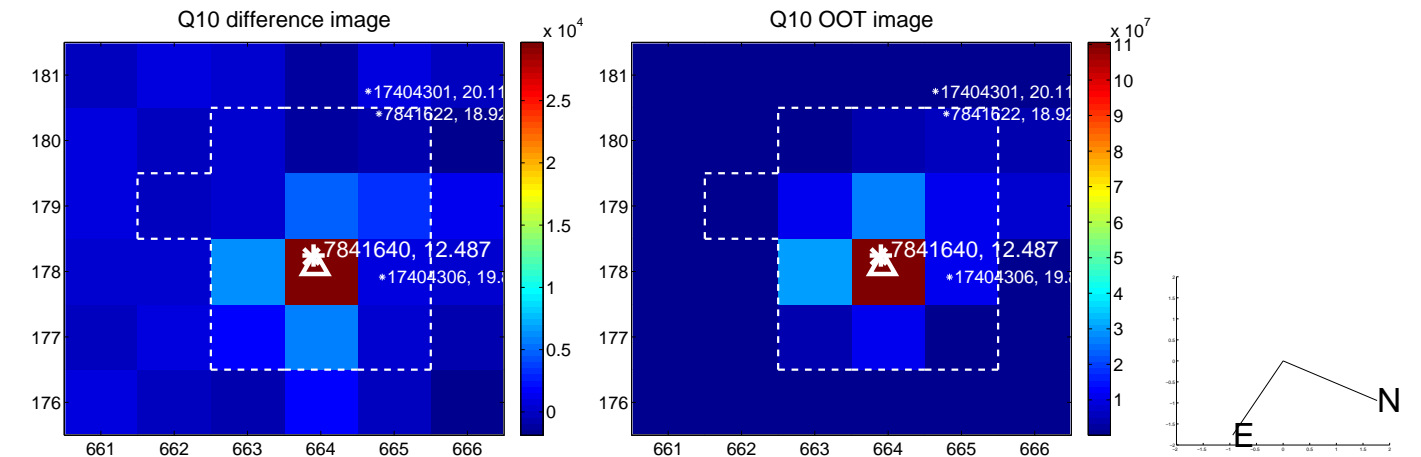
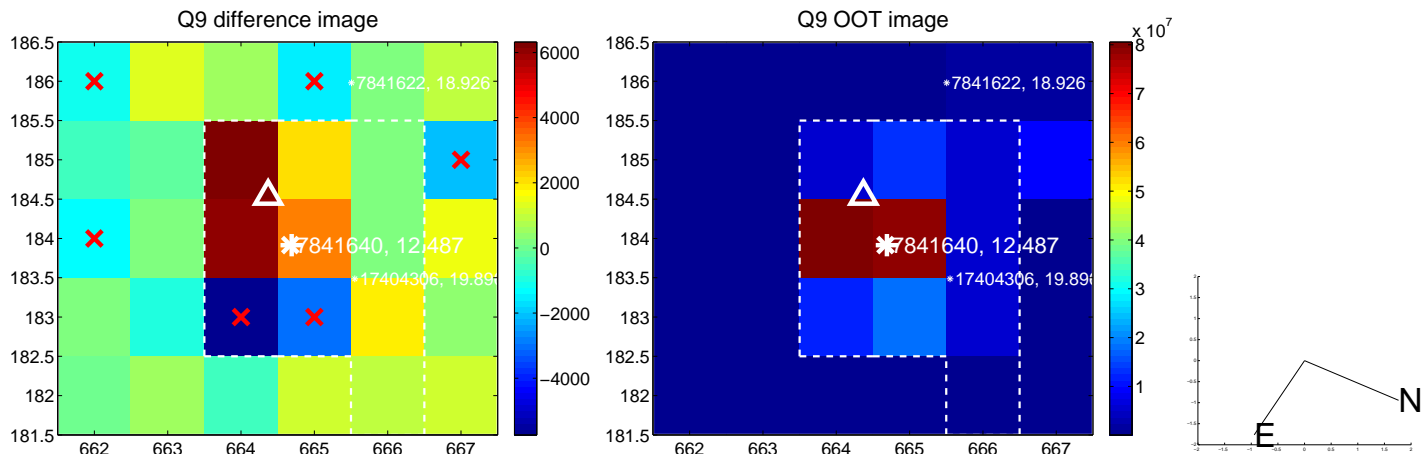
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



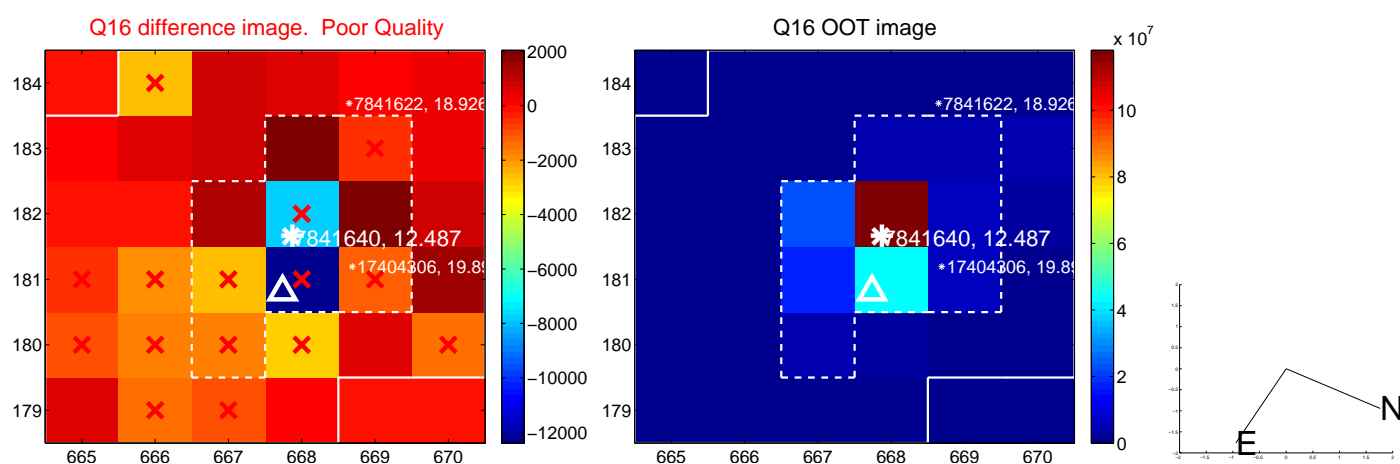
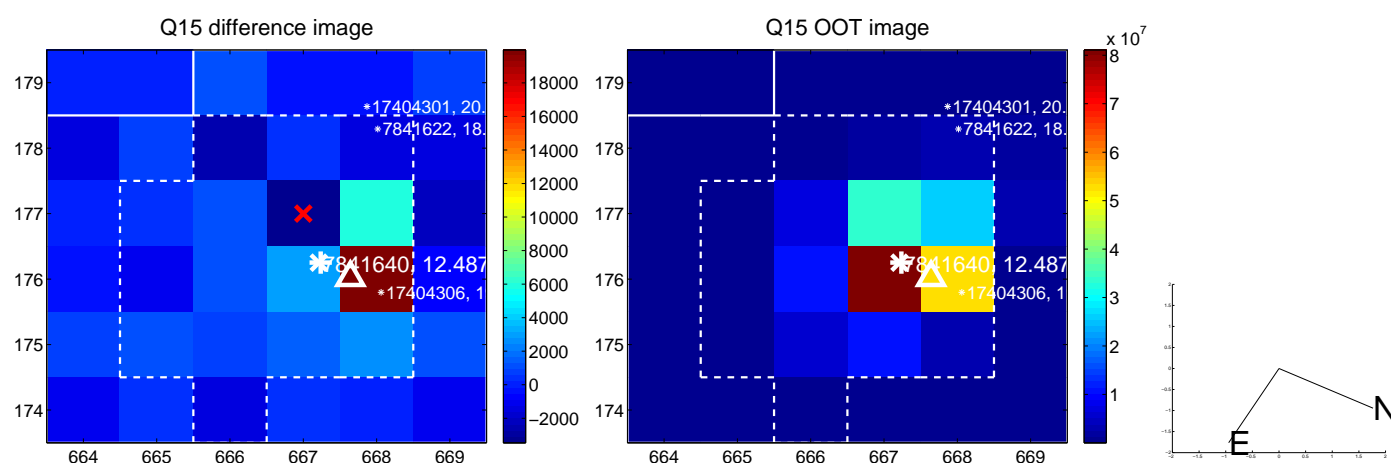
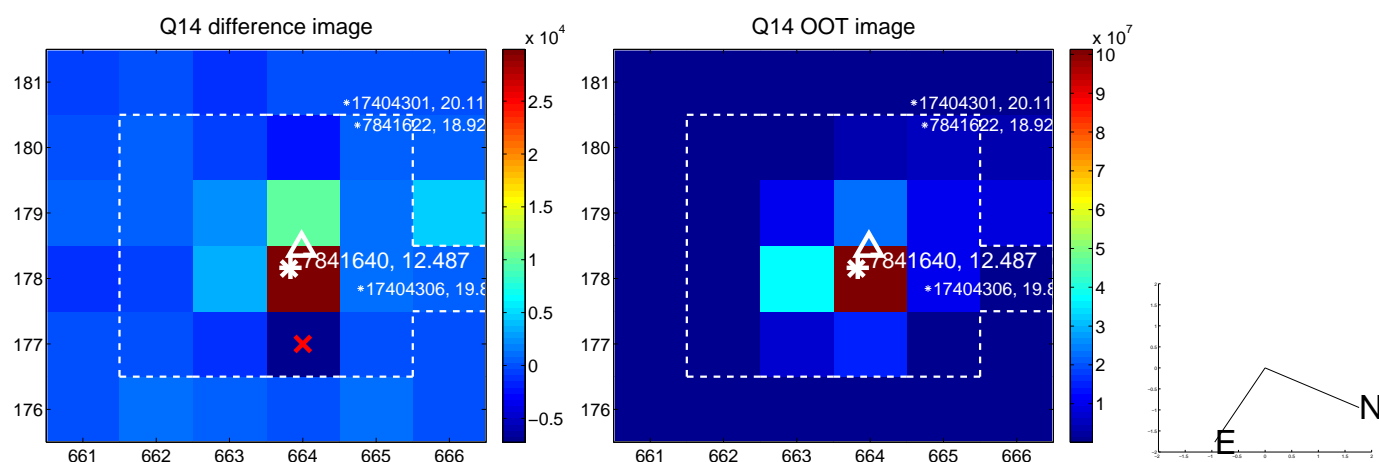
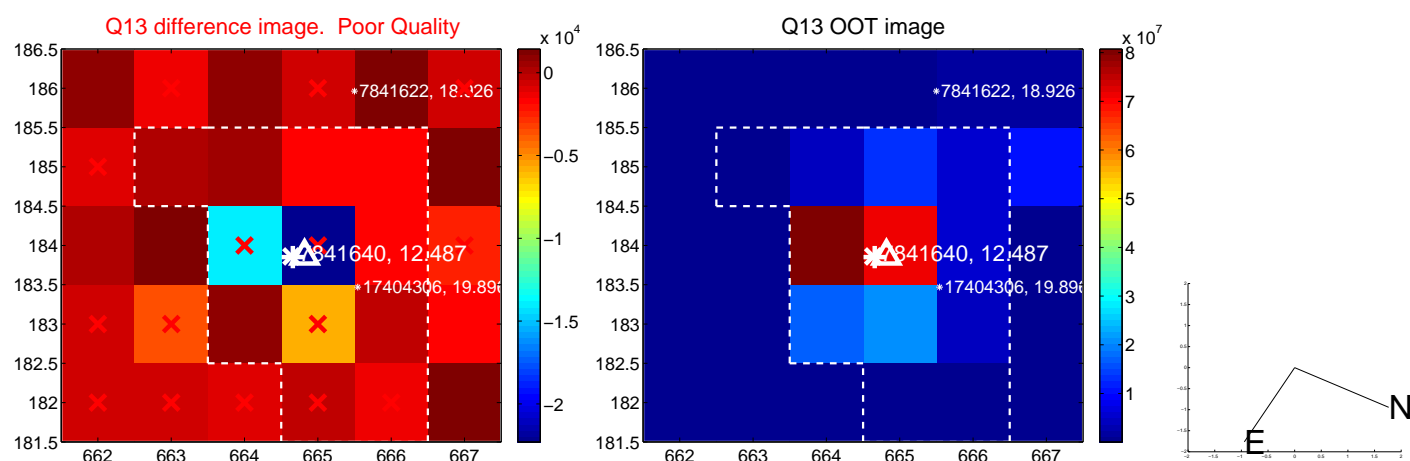
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



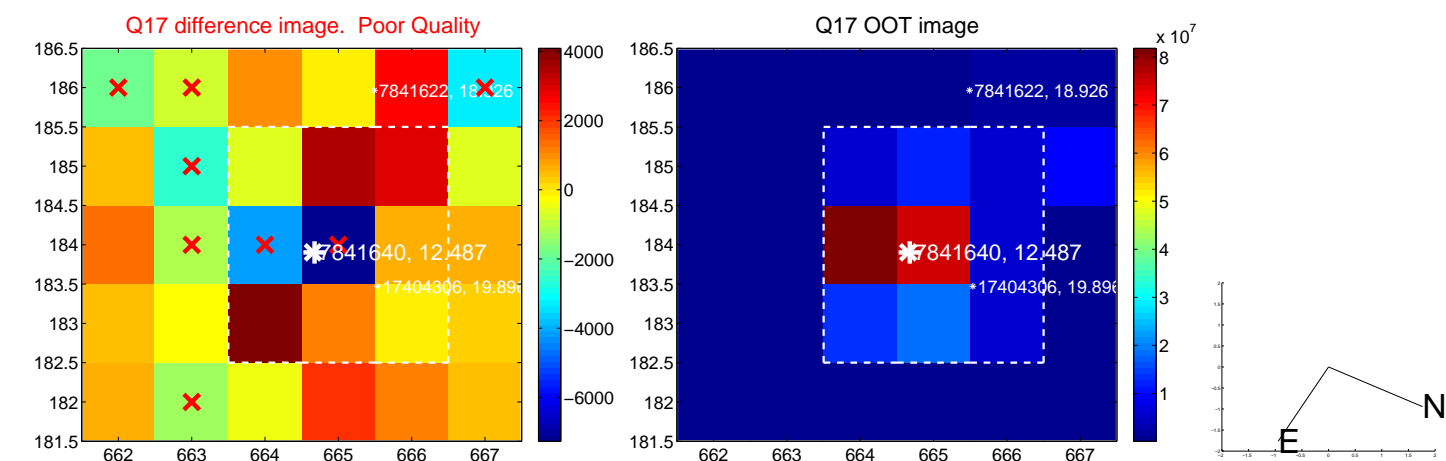
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



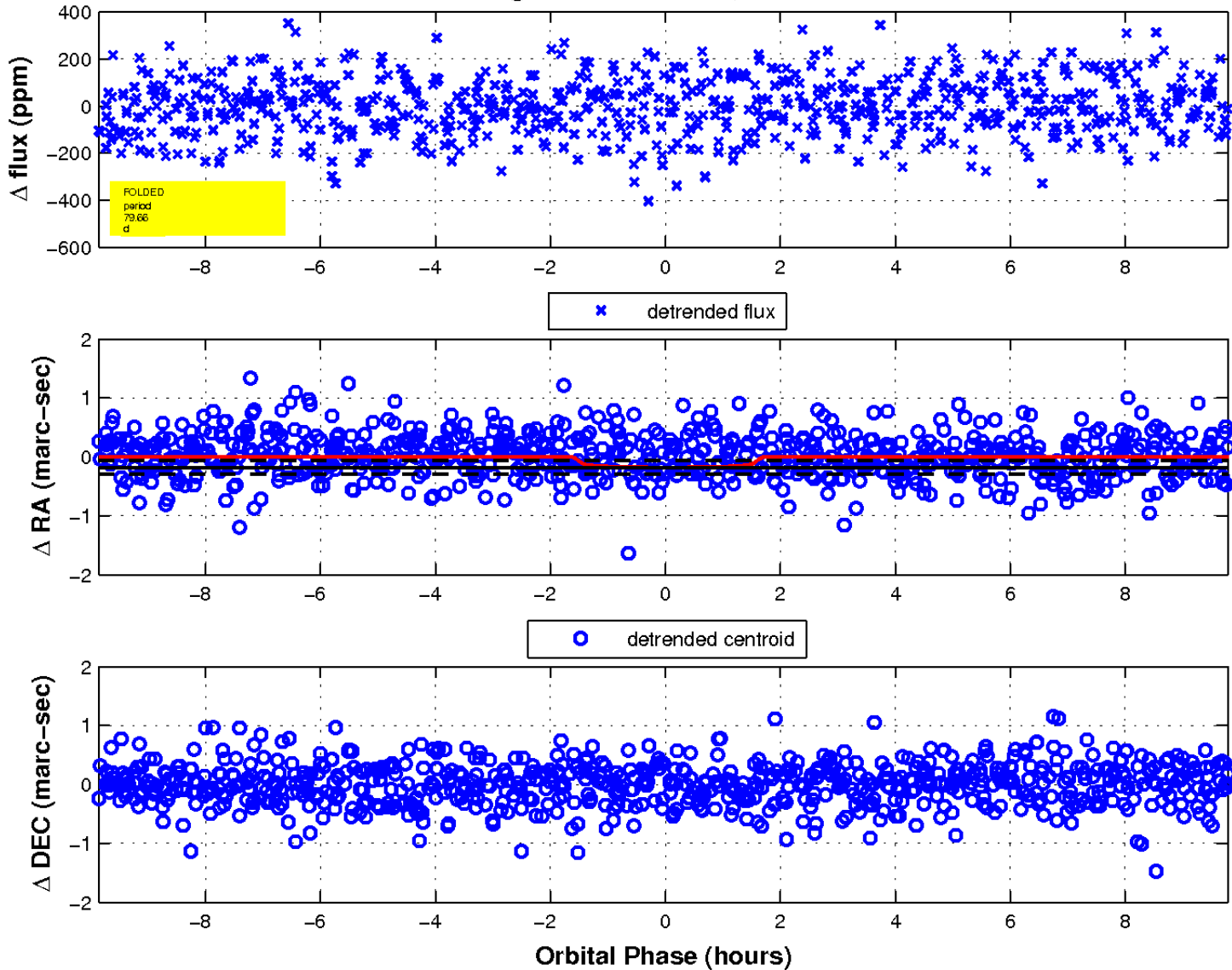
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

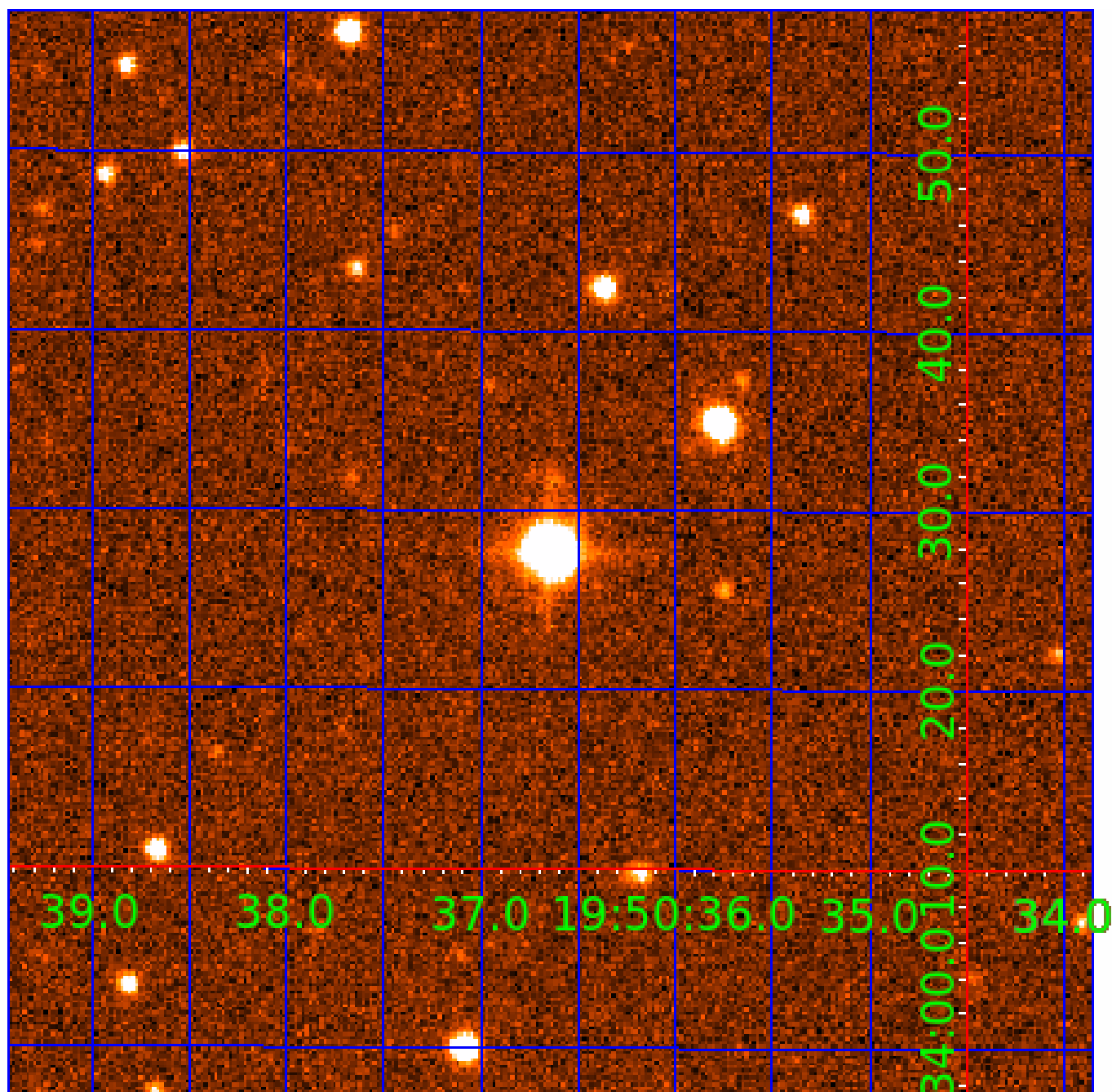


fluxWeightedCentroids, Planet 5 of 8



UKIRT Image

Declination



KIC 007841640

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007841640-01	OBS	No	1.716619	132.218549	3.5	12.498	8.5	2.2	2.77	6886	0.54	13678.52
007841640-03	OBS	No	79.992434	176.697388	225.8	3.966	16.8	15.2	2.77	6886	4.85	81.57
007841640-04	OBS	No	32.448993	134.941138	264.1	1.099	15.4	11.6	2.77	6886	4.61	271.65
007841640-05	OBS	No	79.660484	146.688969	232.0	3.286	14.9	13.1	2.77	6886	4.72	82.03
007841640-06	OBS	No	15.842593	142.699268	143.4	2.022	13.4	13.3	2.77	6886	3.36	706.59
007841640-07	OBS	No	46.025128	133.576410	153.7	5.475	12.8	11.3	2.77	6886	3.97	170.46
007841640-08	OBS	No	22.135742	152.672679	123.6	3.686	13.0	12.1	2.77	6886	3.48	452.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007841640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007841640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007841640-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

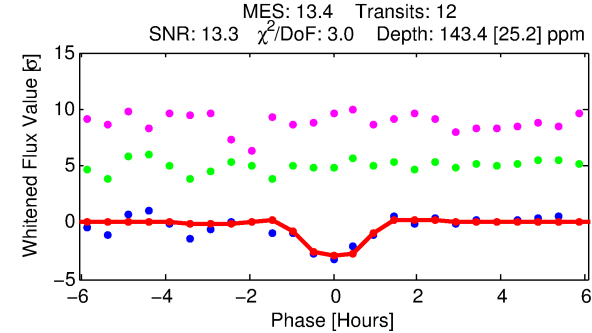
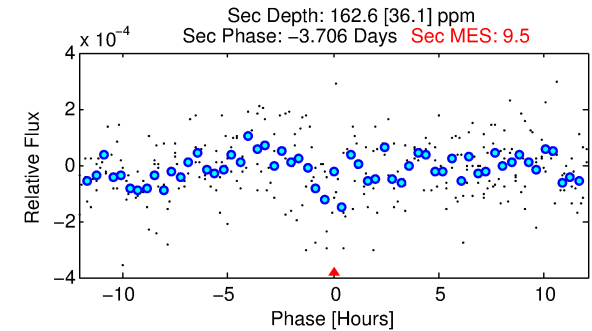
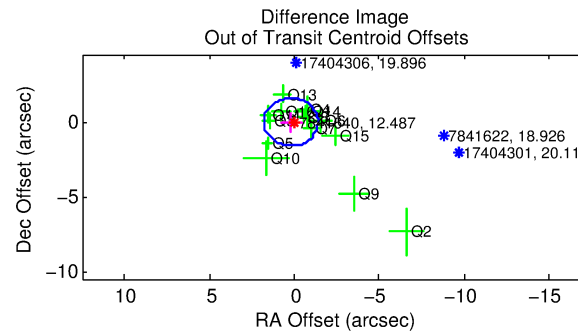
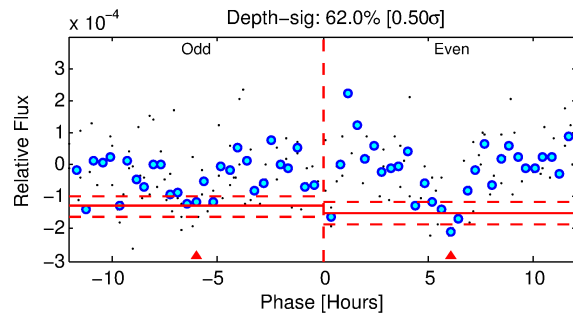
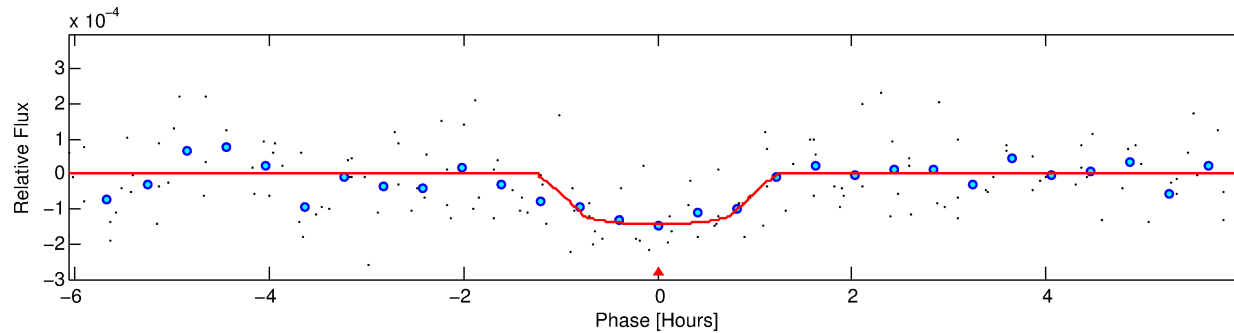
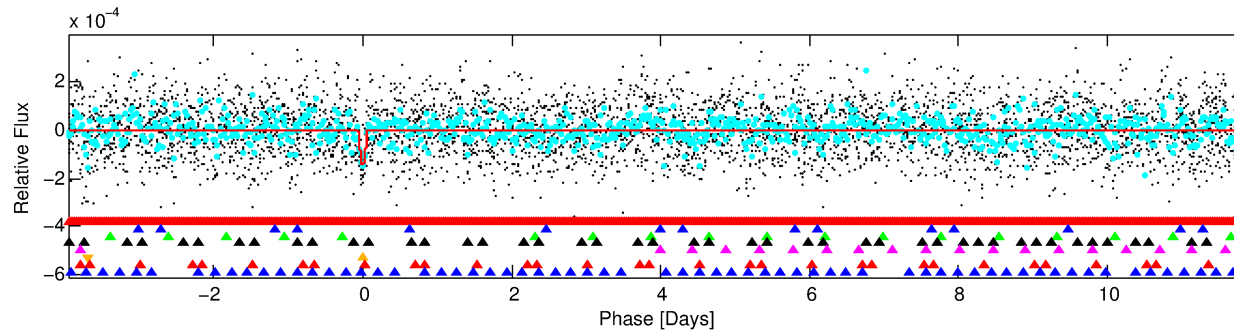
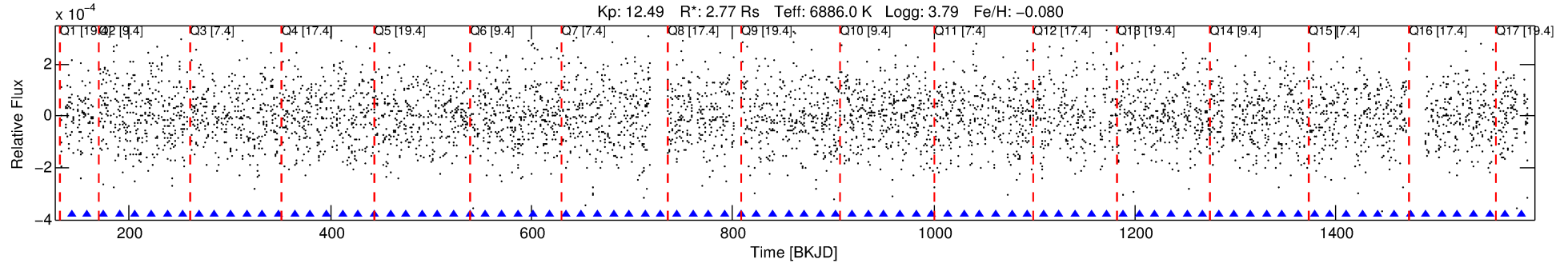
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007841640-06

No Significant Match Found

DV One-Page Summary

KIC: 7841640 Candidate: 6 of 8 Period: 15.843 d



DV Fit Results:

Period = 15.84259 [0.00016] d
Epoch = 142.6993 [0.0086] BKJD
Rp/R* = 0.0111 [0.0172]
a/R* = 60.51 [524.16]
b = 0.02 [398.64]
Seff = 706.59 [372.99]
Teq = 1315 [173] K
Rp = 3.36 [5.36] Re
a = 0.1482 [0.0486] AU
Ag = 174.12 [549.97] [0.31 σ]
Teffp = 7384 [5760] K [1.05 σ]

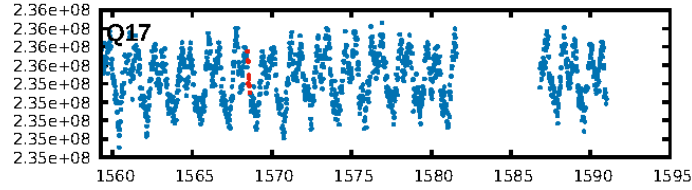
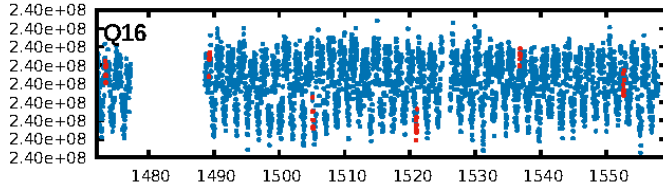
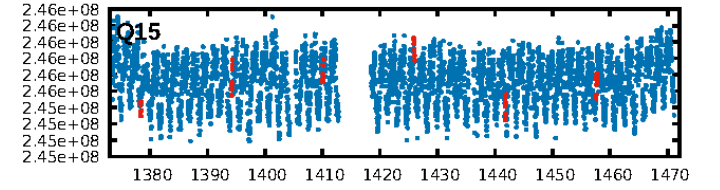
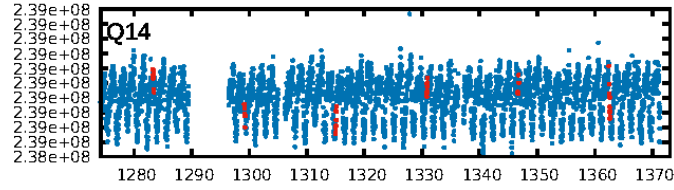
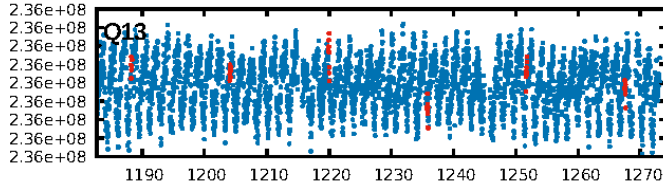
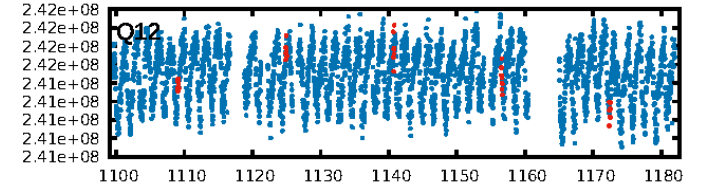
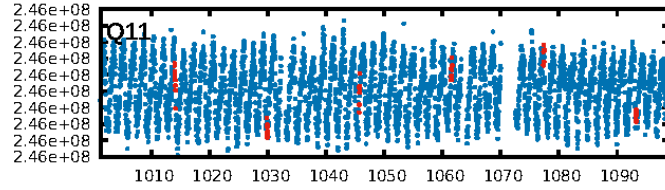
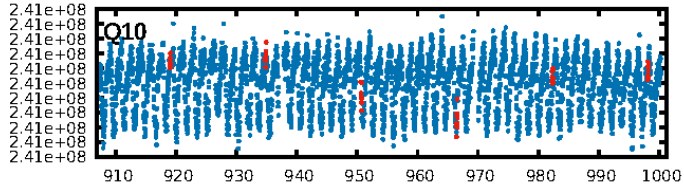
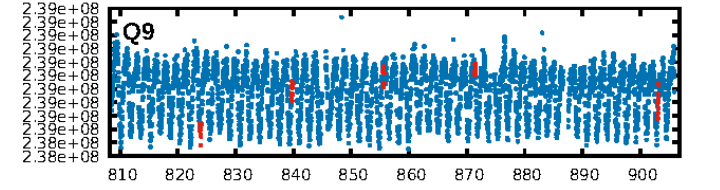
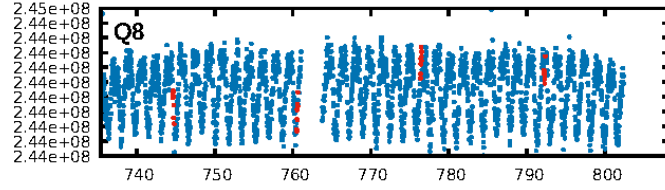
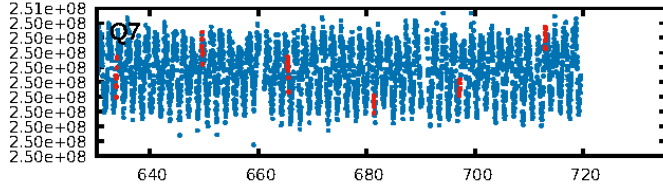
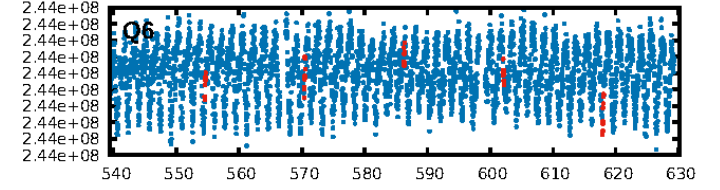
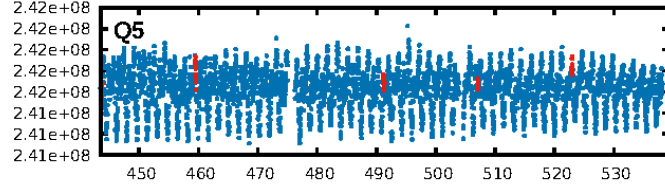
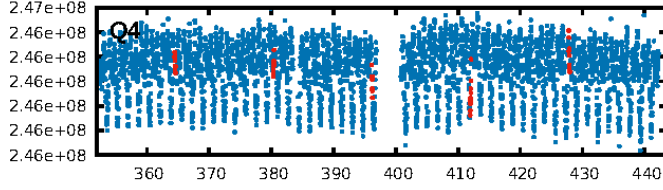
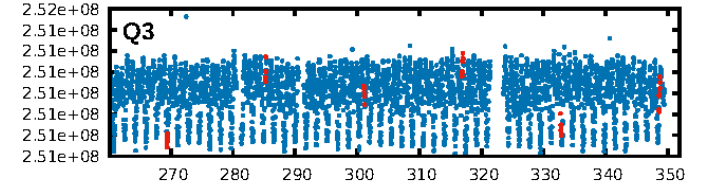
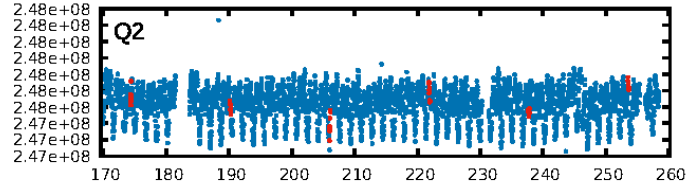
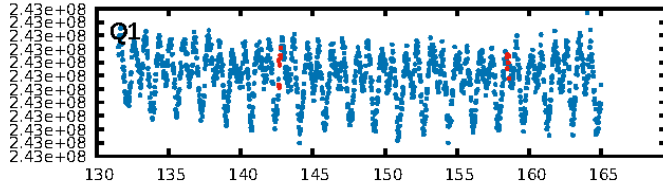
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.78 σ]
LongPeriod-sig: 100.0% [35.92 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 15.4%
Bootstrap-pfa: 9.93e-10
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 0.681
Centroid-sig: N/A
Centroid-so: 1.094 arcsec [2.47 σ]
OotOffset-rm: 0.192 arcsec [0.36 σ]
KicOffset-rm: 0.150 arcsec [0.20 σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.36 [5/14]
DiffImageOverlap-fno: 0.88 [15/17]

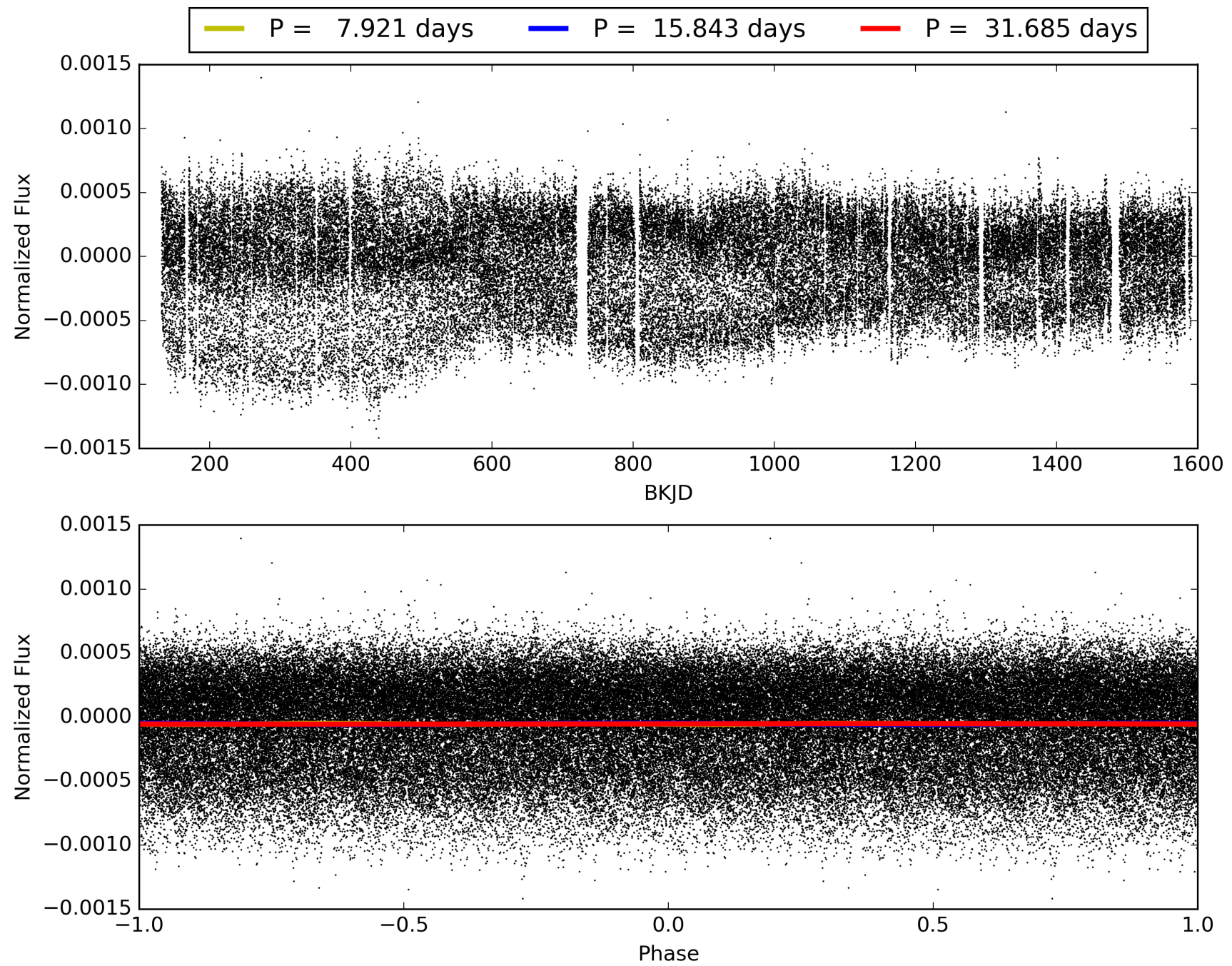
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:45 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007841640-06, PDC Light Curves

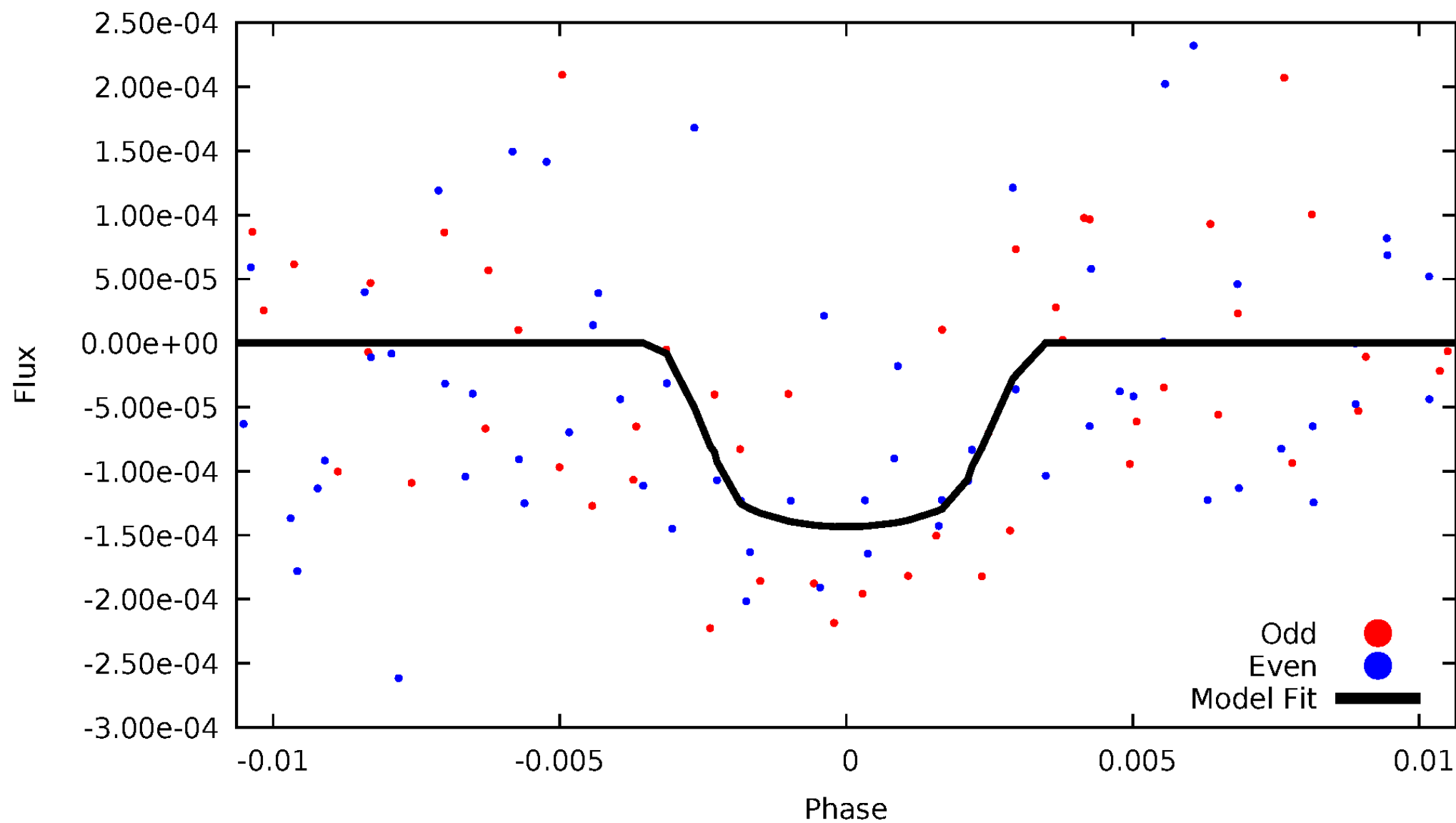


TCE 007841640-06



DV Odd/Even

TCE 007841640-06

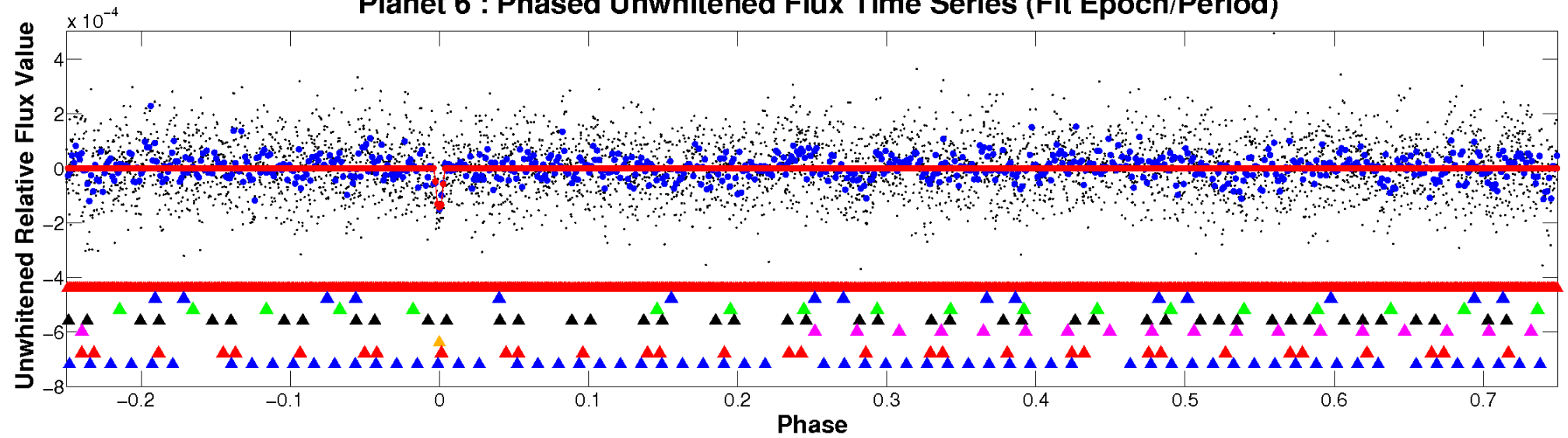


ALT Odd/Even

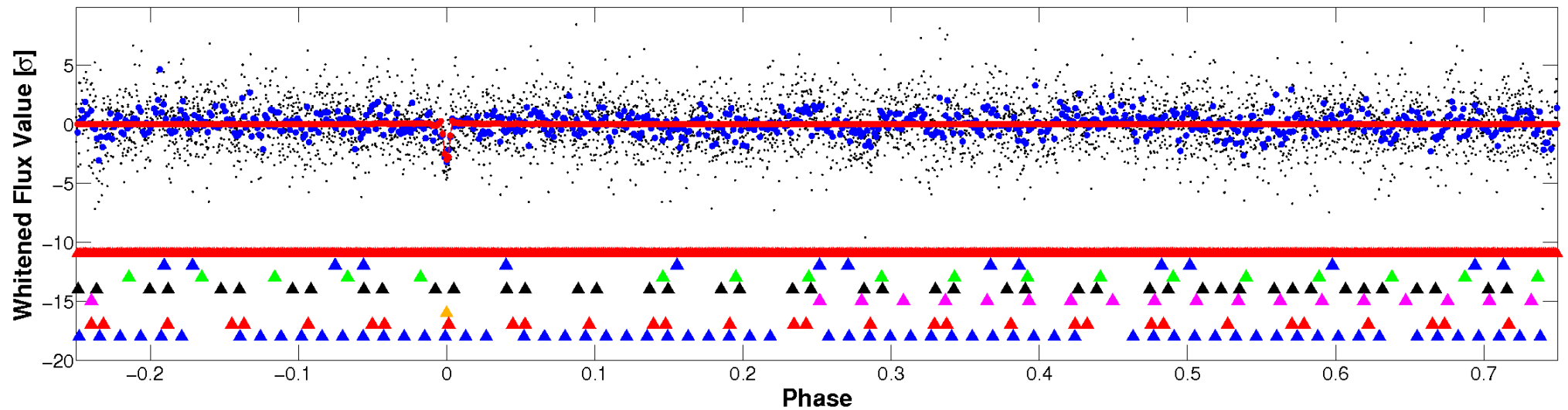
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

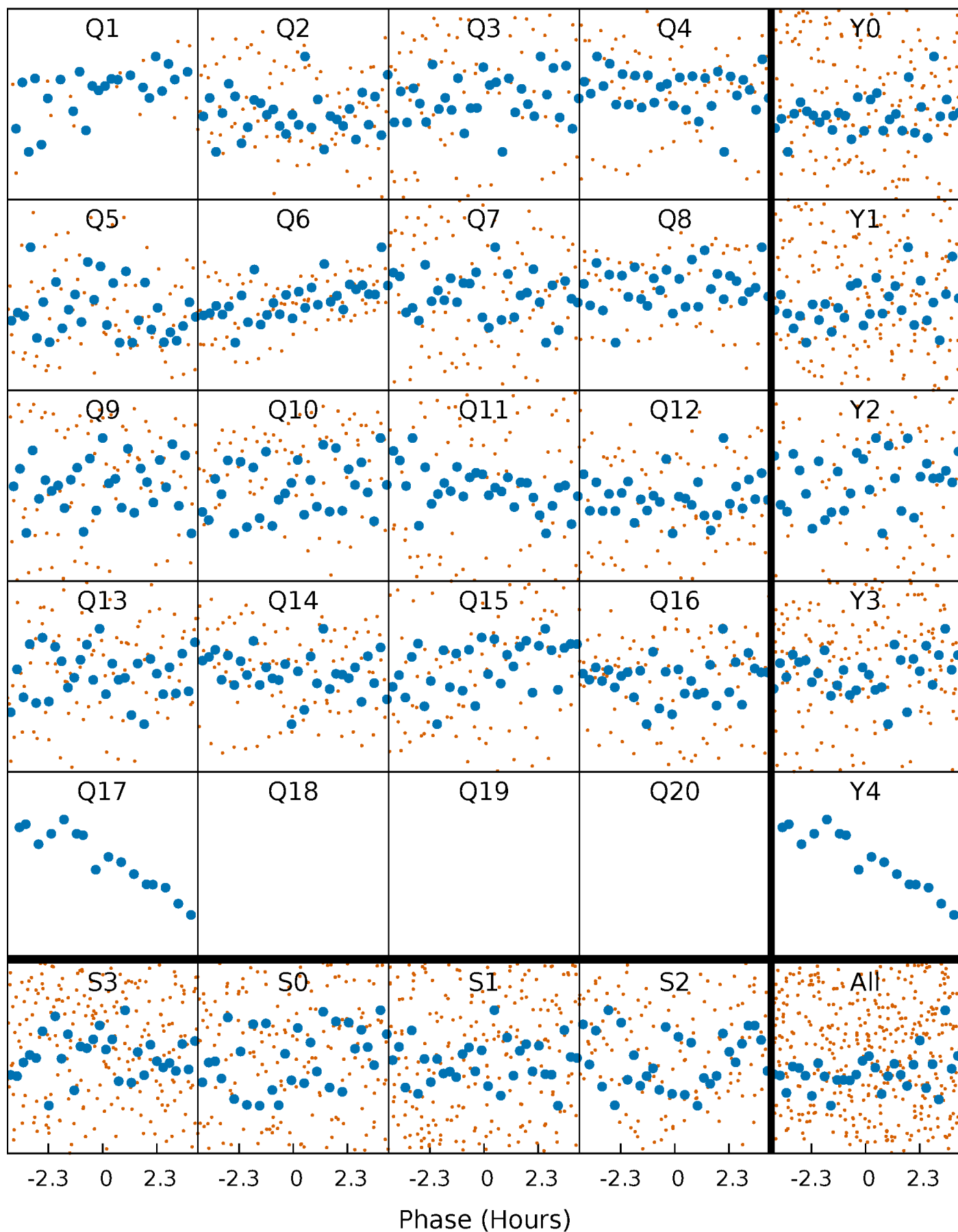


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



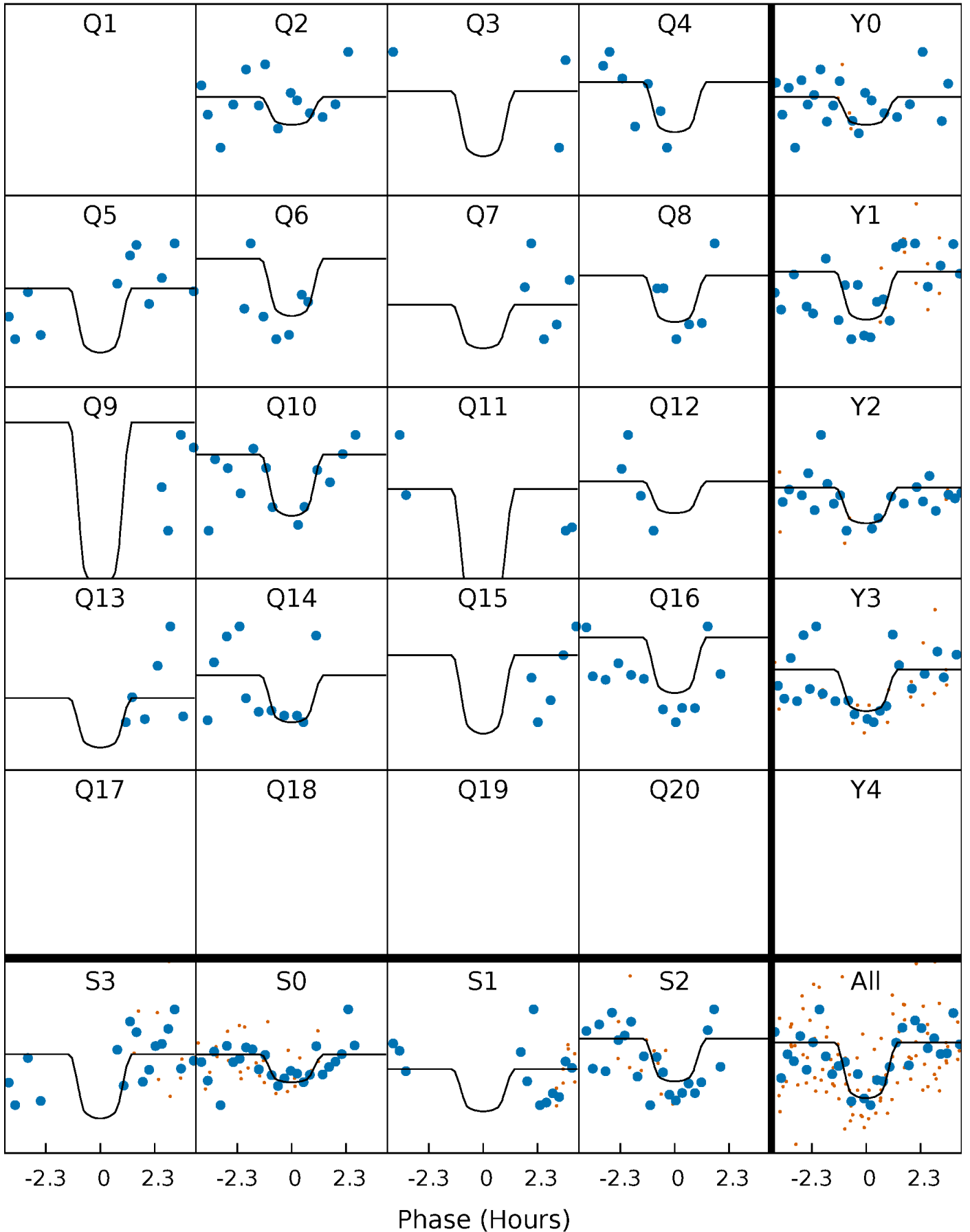
PDC Quarter-Phased Transit Curves

TCE 007841640-06 P= 15.842593 Days $T_0=142.699268$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007841640-06 P= 15.842593 Days $T_0=142.699268$ (BKJD)

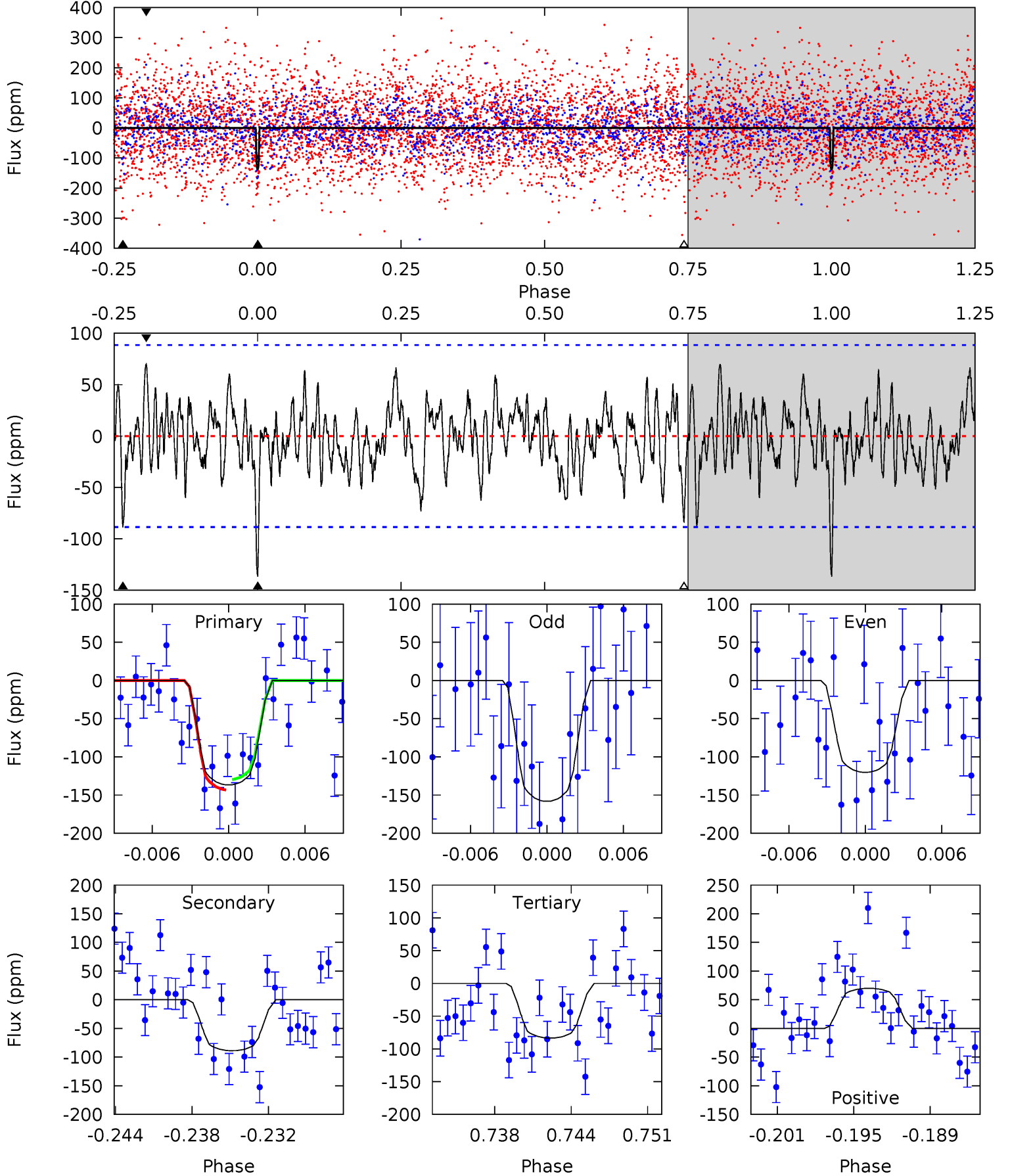


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007841640-06, P = 15.842593 Days, E = 126.856675 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.90	5.14	4.83	4.04	5.12	2.74	1.53	3.08	3.86	0.31	1.09	1.08	0.88	0.34	0.40



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007841640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6886^{+163}_{-245}	$3.789^{+0.292}_{-0.097}$	$-0.080^{+0.250}_{-0.300}$	$2.775^{+0.428}_{-0.998}$	$1.726^{+0.163}_{-0.353}$	$0.114^{+0.237}_{-0.036}$
	+2%/-4%	+8%/-3%	+312%/-375%	+15%/-36%	+9%/-20%	+208%/-32%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007841640-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-89±17	$4.71^{+4.20}_{-3.17}$	1792^{+115}_{-151}	5109^{+4635}_{-1140}	46^{+394}_{-33}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

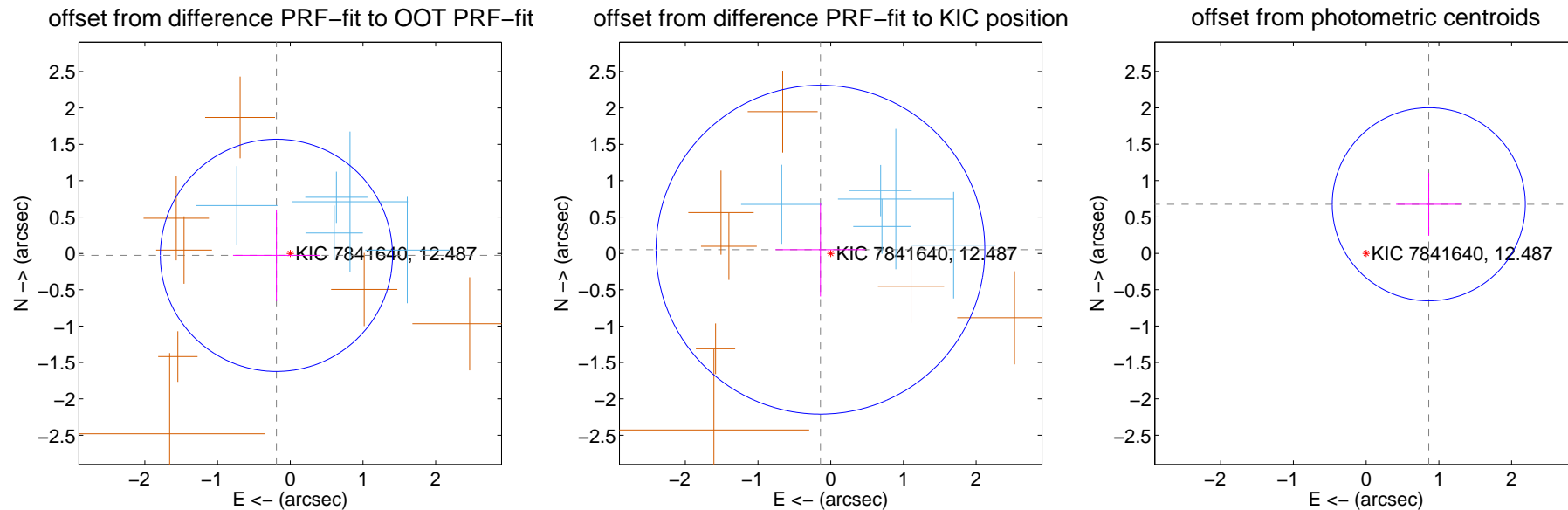
DV Centroid Data

Supplemental centroid analysis for 007841640-06. Kepler magnitude: 12.49. Transit SNR 13.29

There are 5 quarters with good PRF difference image offsets

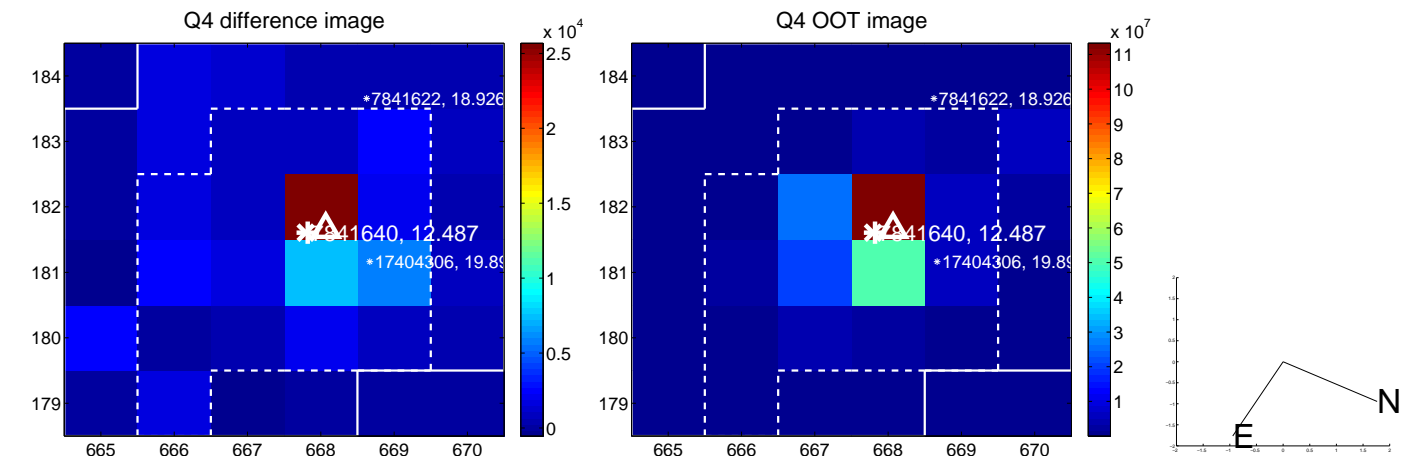
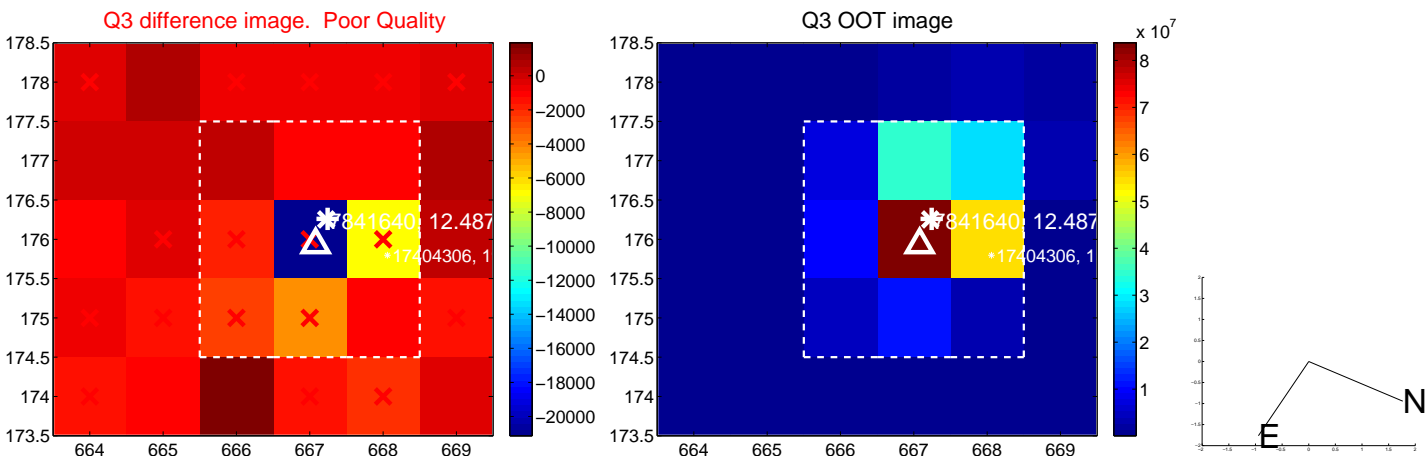
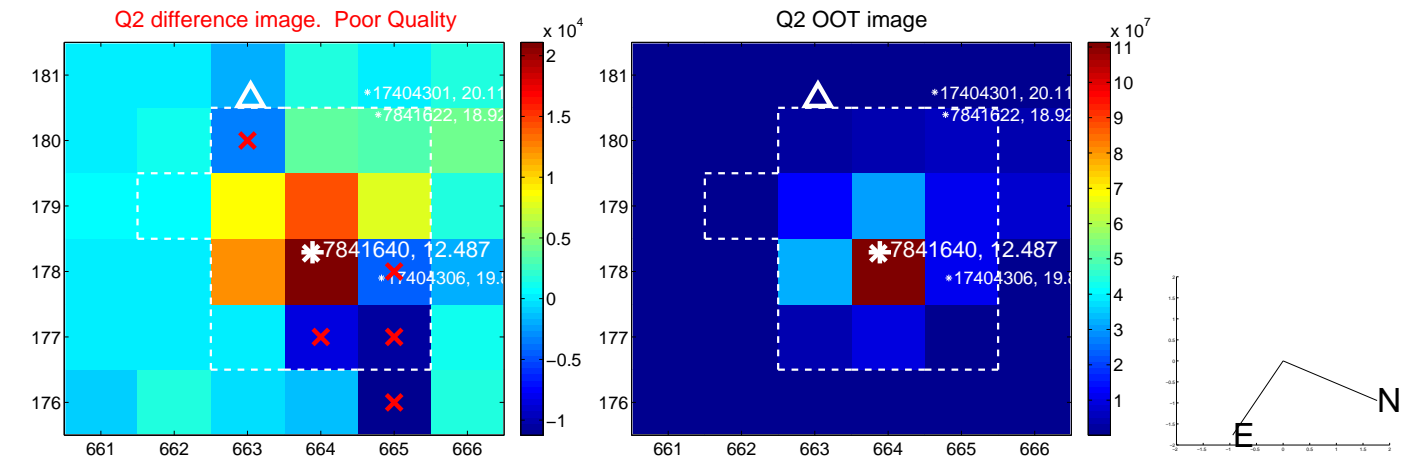
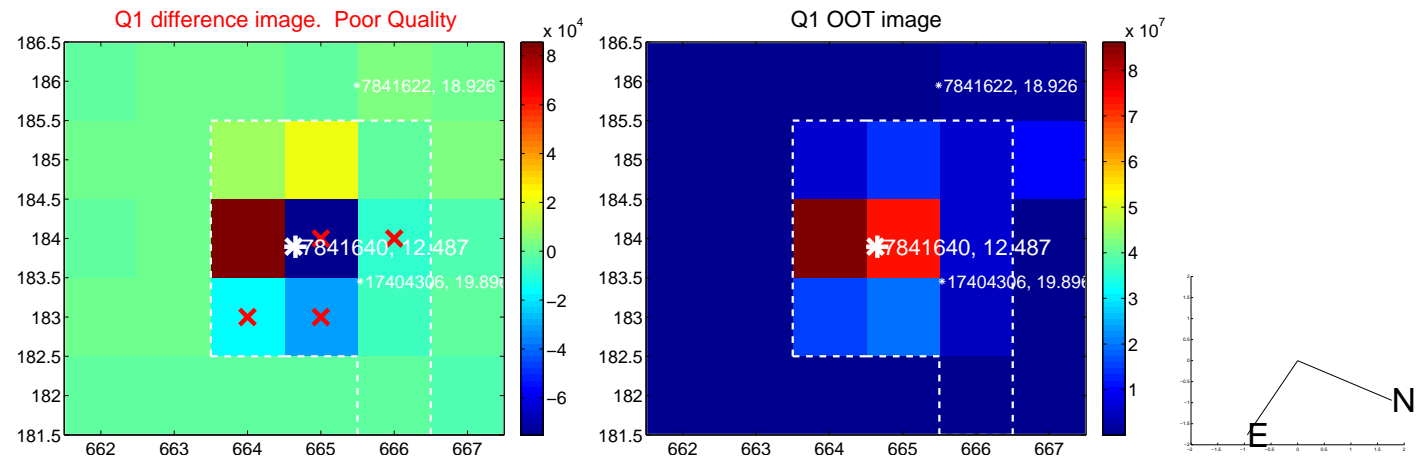
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.192 ± 0.532	0.36	0.190 ± 0.597	-0.027 ± 0.630
PRF-fit source offset from KIC position	0.150 ± 0.754	0.20	0.141 ± 0.618	0.051 ± 0.643
photometric centroid source offset	1.09 ± 0.44	2.47	-0.86 ± 0.45	0.67 ± 0.43

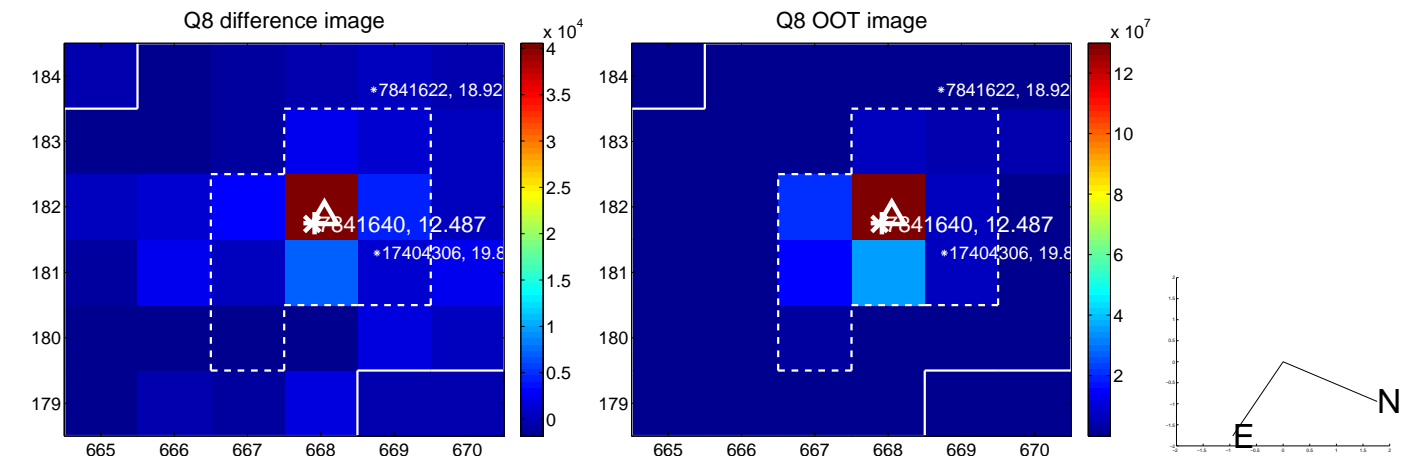
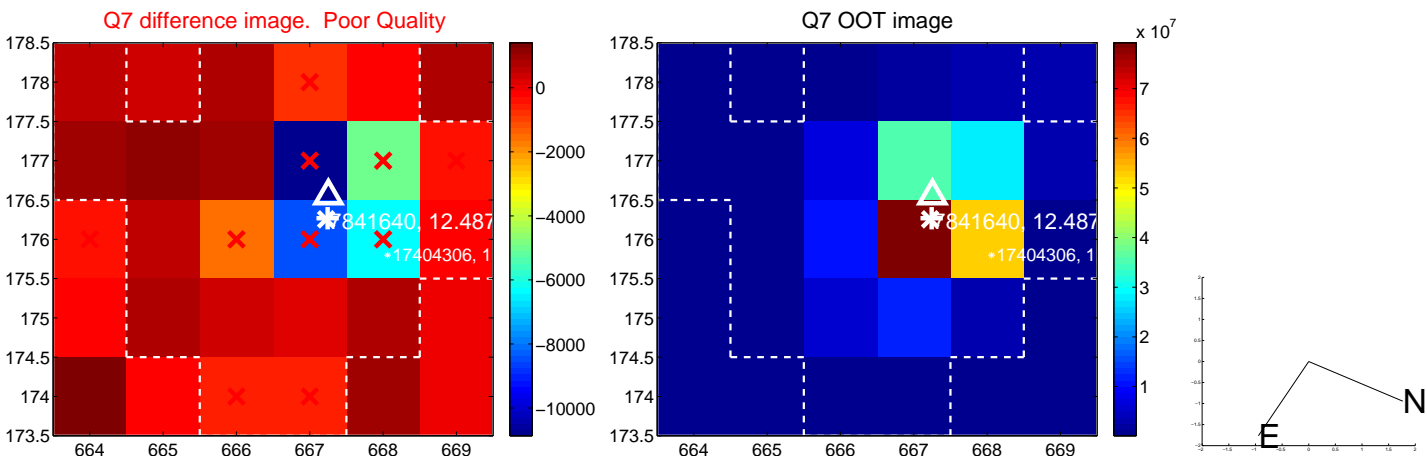
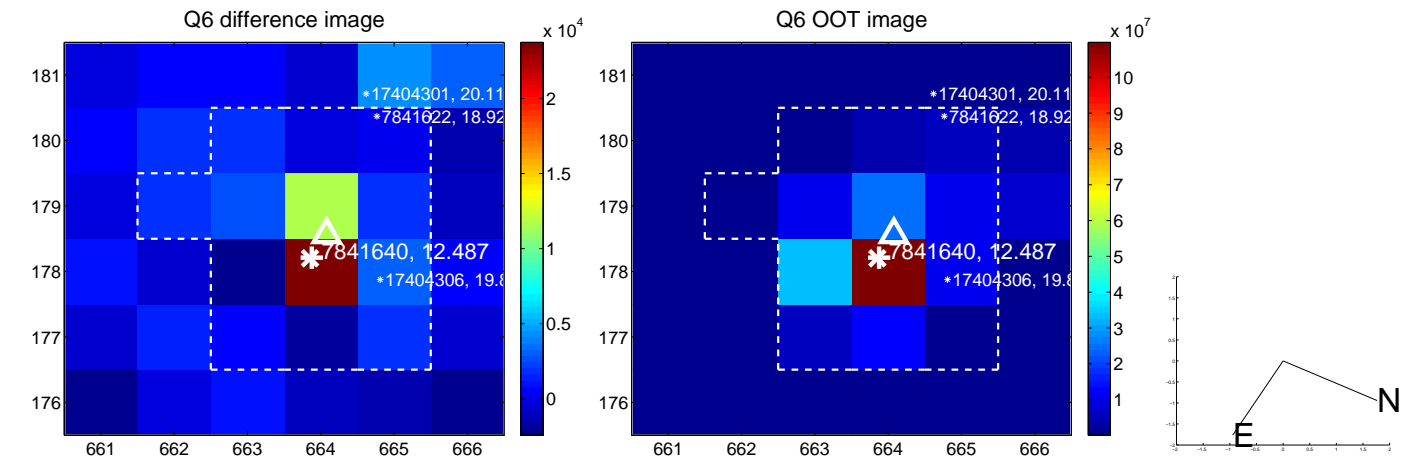
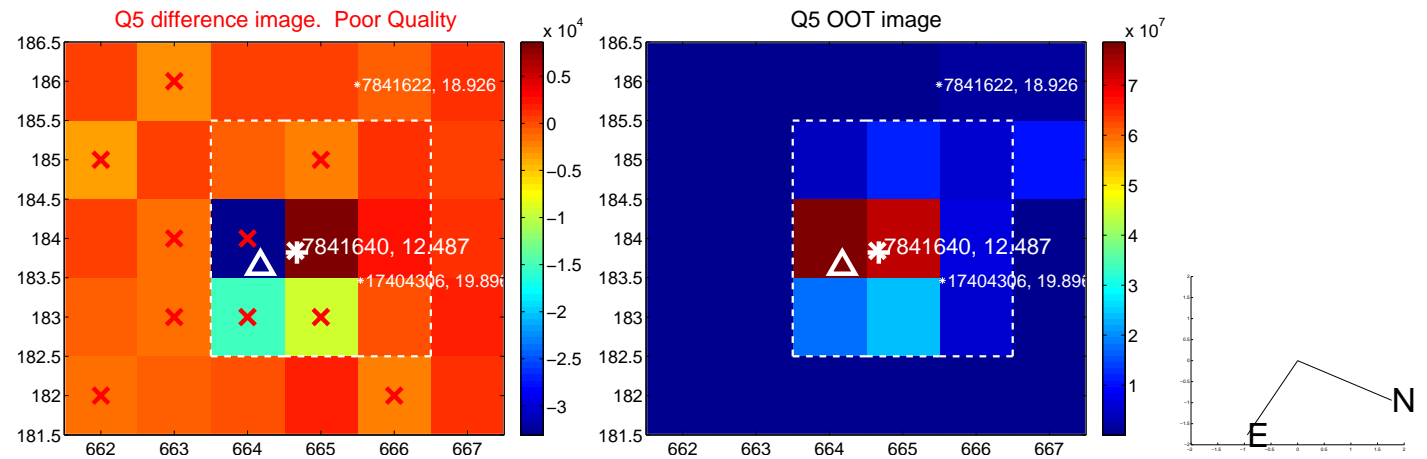


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

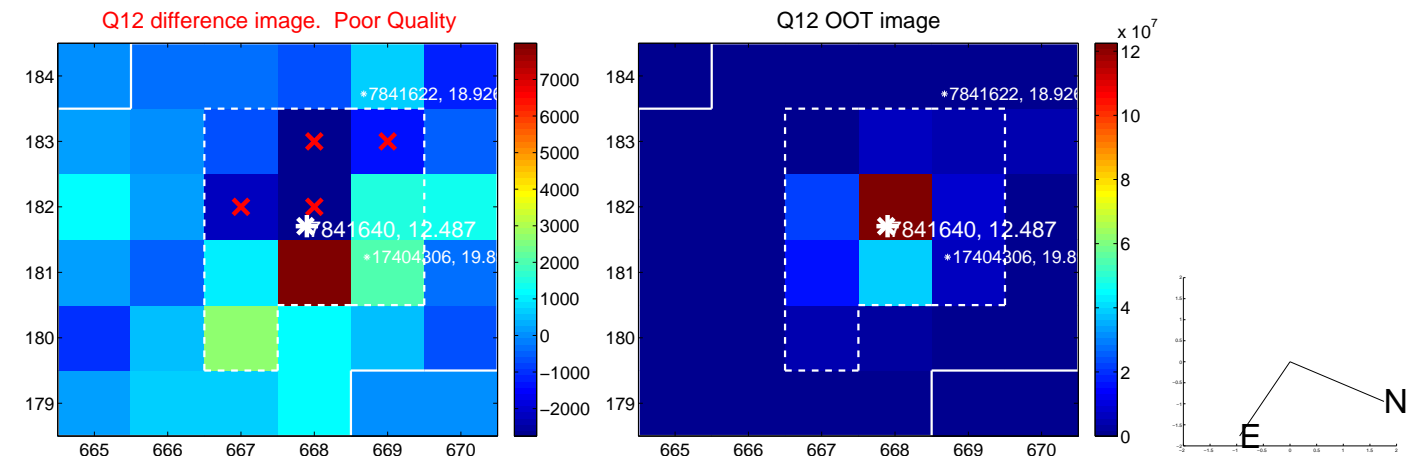
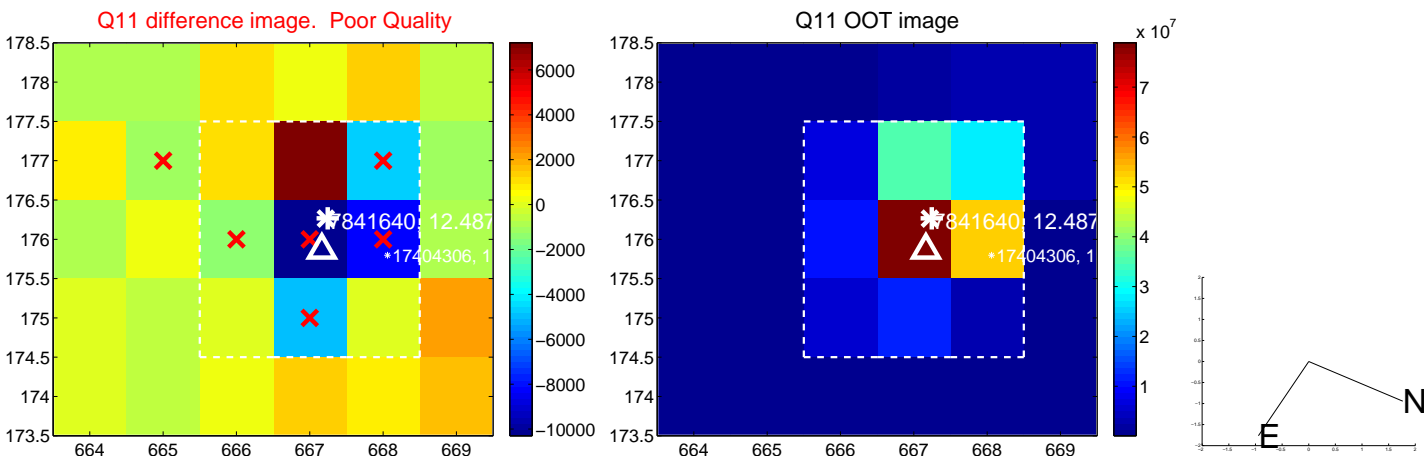
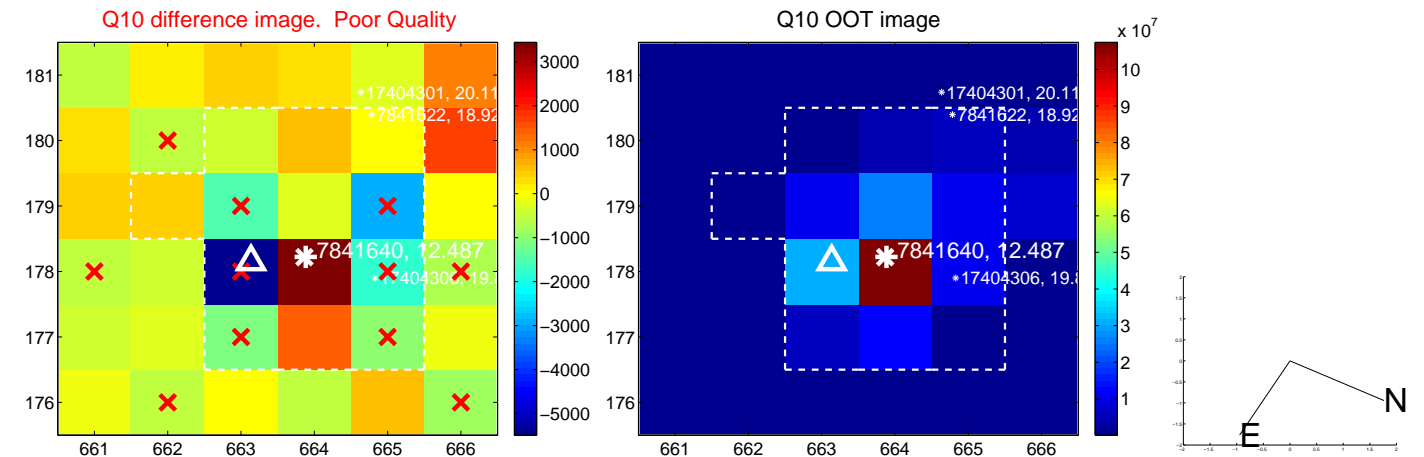
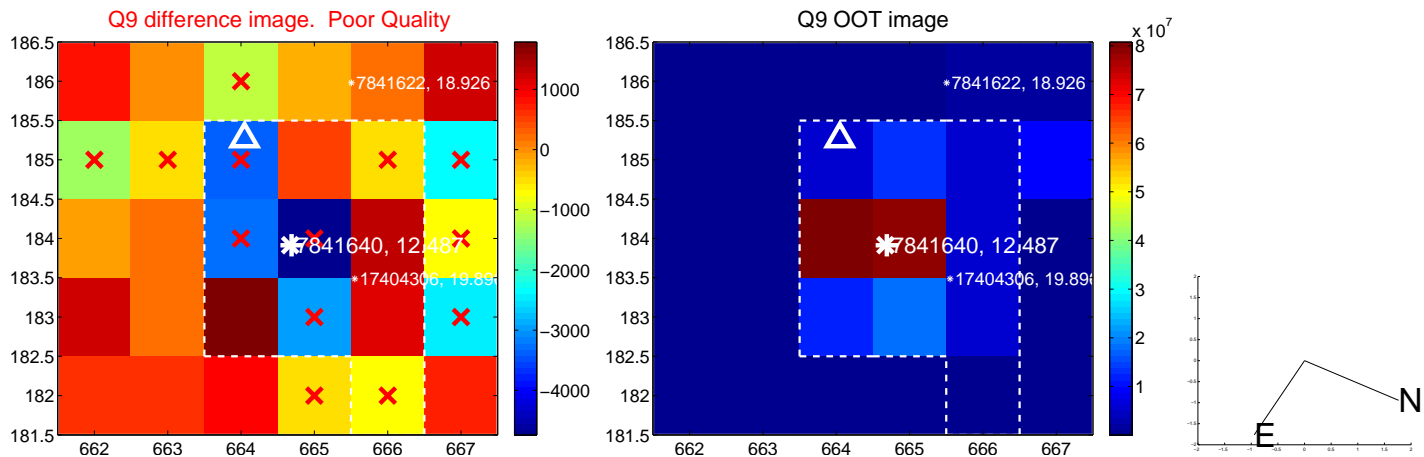
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



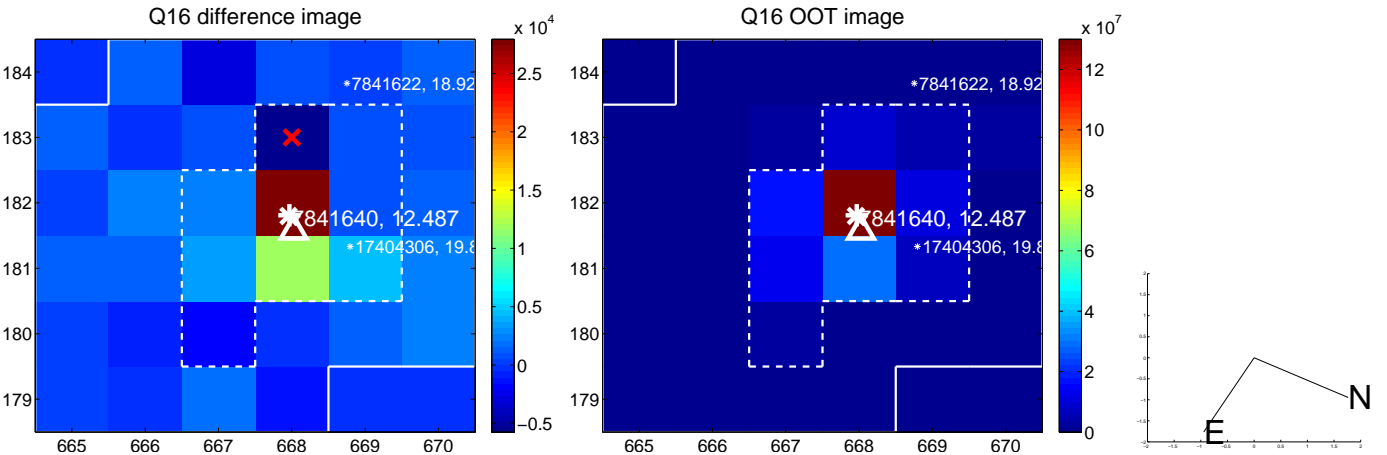
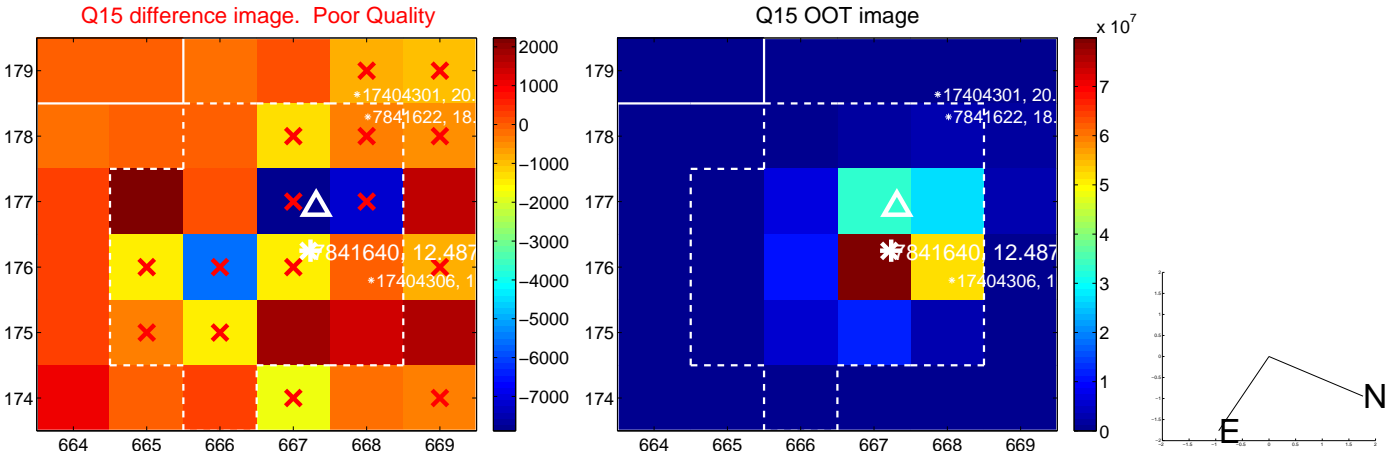
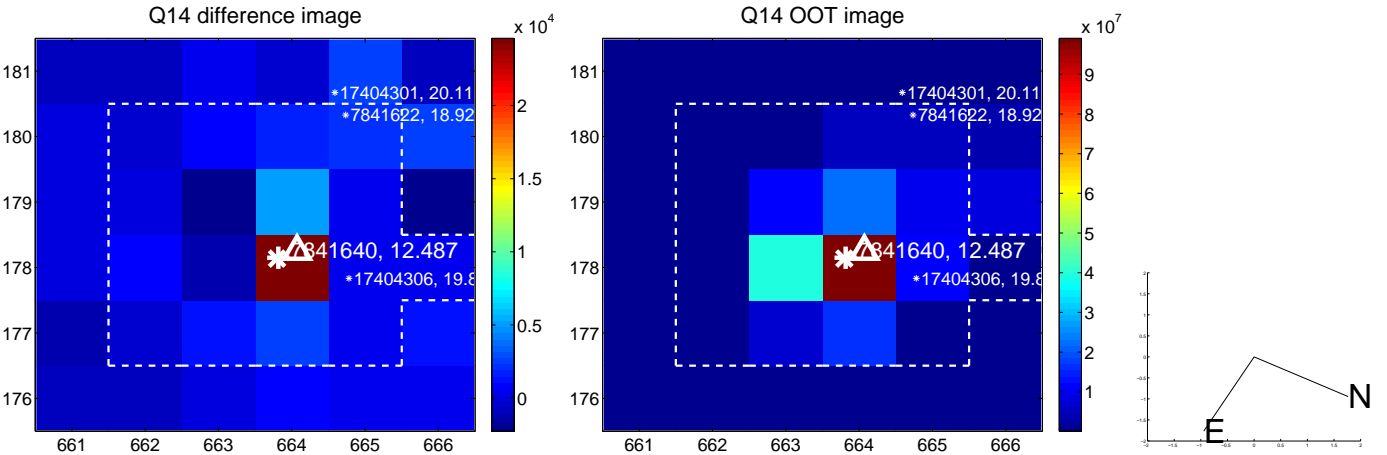
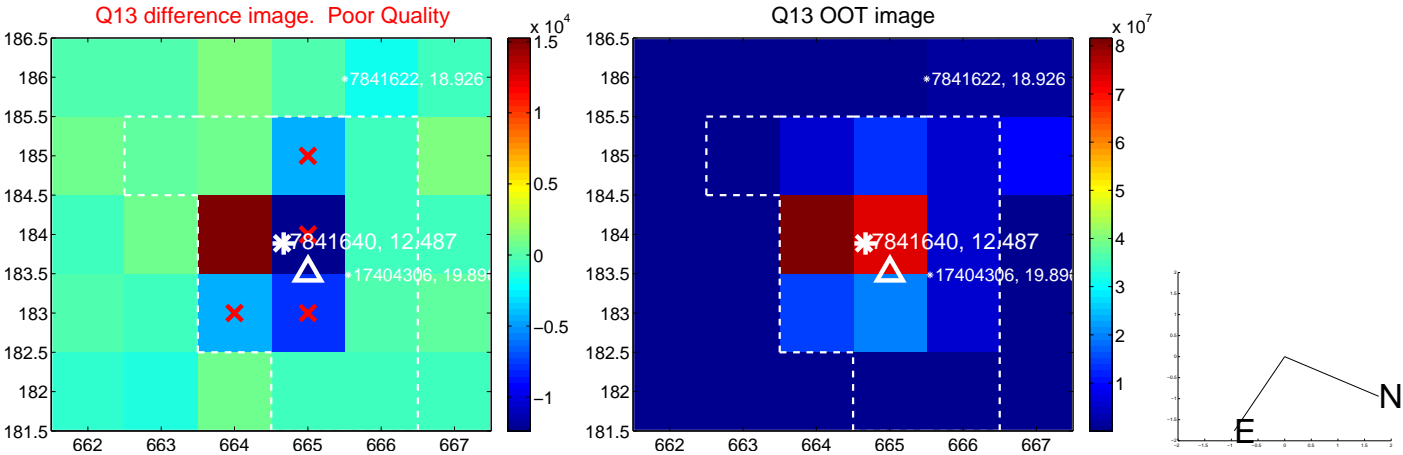
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



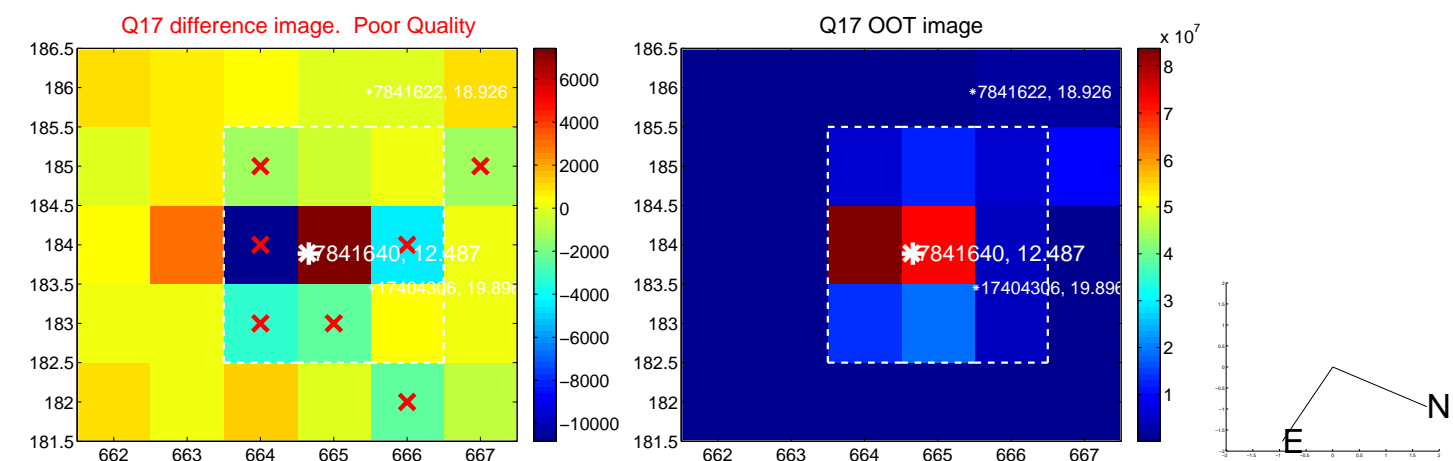
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



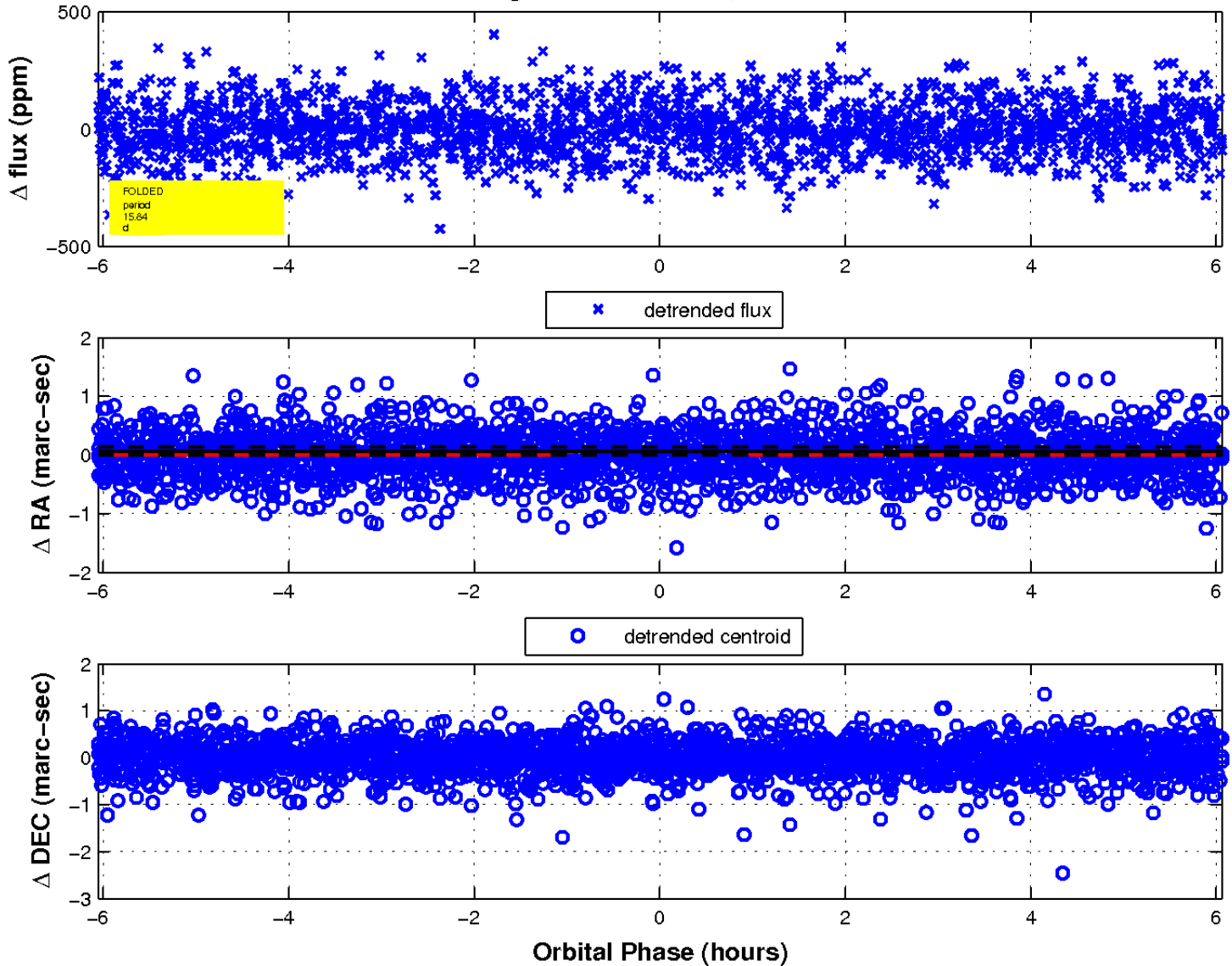
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

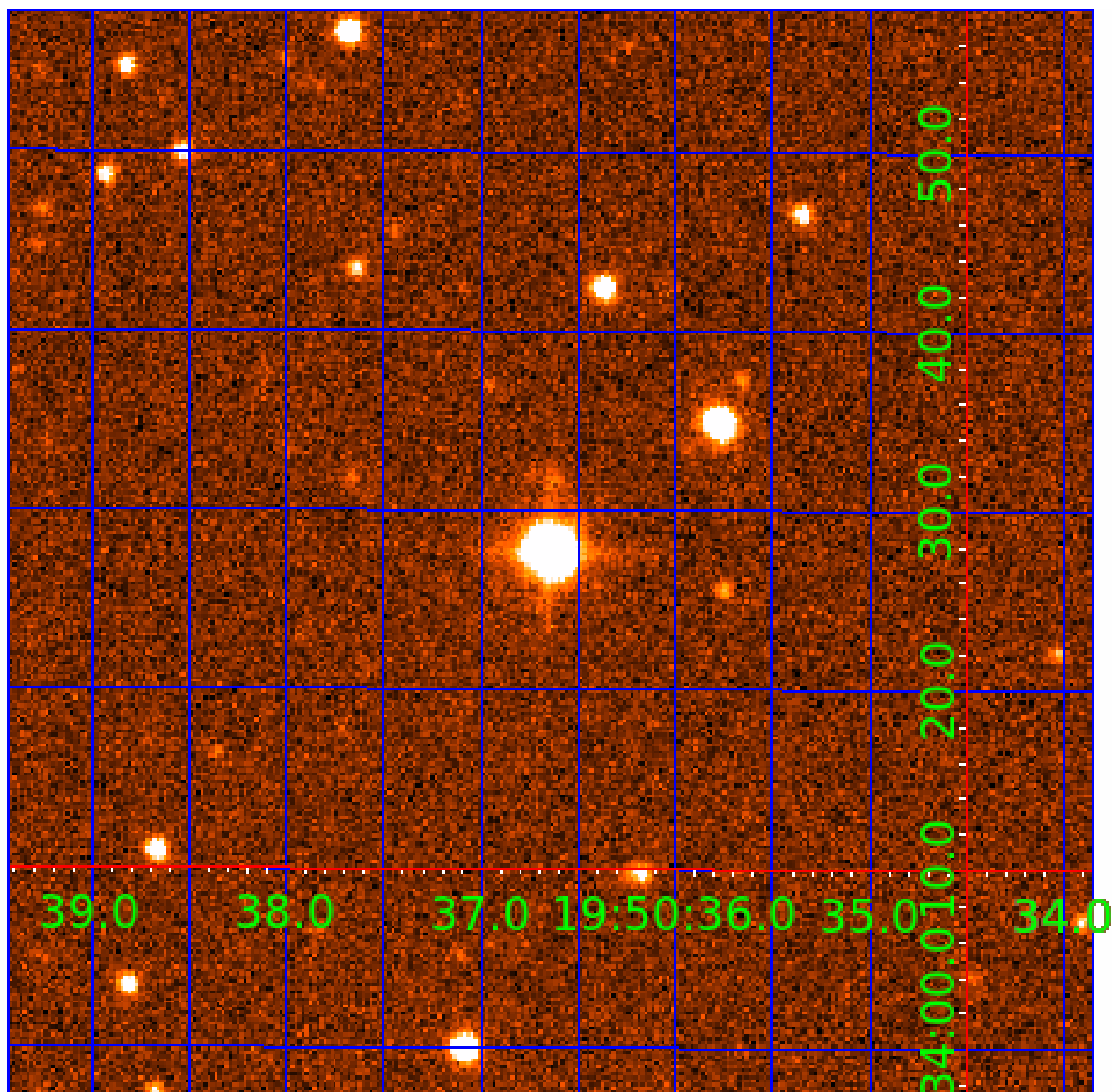


fluxWeightedCentroids, Planet 6 of 8



UKIRT Image

Declination



KIC 007841640

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007841640-01	OBS	No	1.716619	132.218549	3.5	12.498	8.5	2.2	2.77	6886	0.54	13678.52
007841640-03	OBS	No	79.992434	176.697388	225.8	3.966	16.8	15.2	2.77	6886	4.85	81.57
007841640-04	OBS	No	32.448993	134.941138	264.1	1.099	15.4	11.6	2.77	6886	4.61	271.65
007841640-05	OBS	No	79.660484	146.688969	232.0	3.286	14.9	13.1	2.77	6886	4.72	82.03
007841640-06	OBS	No	15.842593	142.699268	143.4	2.022	13.4	13.3	2.77	6886	3.36	706.59
007841640-07	OBS	No	46.025128	133.576410	153.7	5.475	12.8	11.3	2.77	6886	3.97	170.46
007841640-08	OBS	No	22.135742	152.672679	123.6	3.686	13.0	12.1	2.77	6886	3.48	452.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007841640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007841640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007841640-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

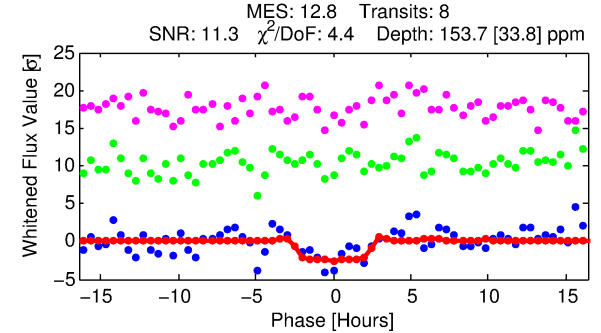
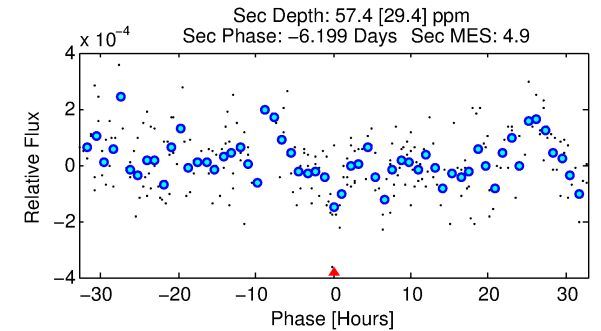
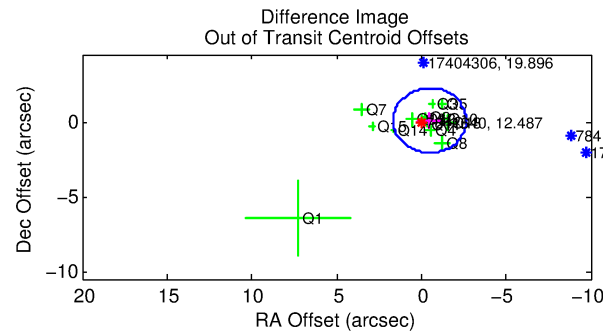
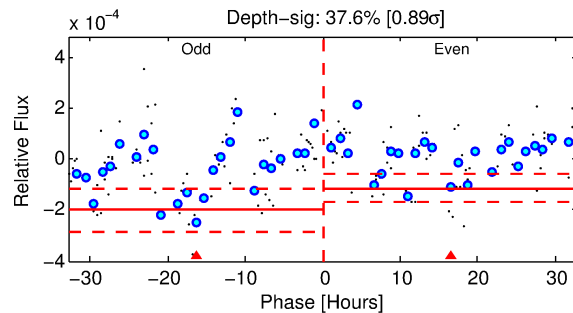
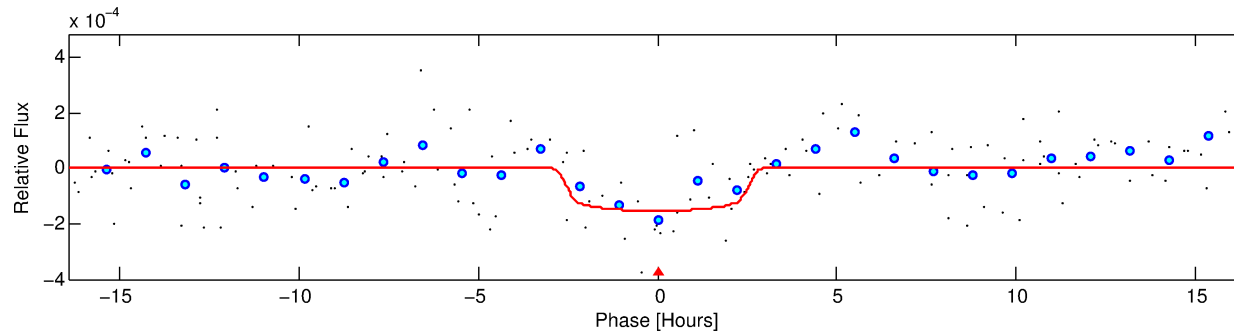
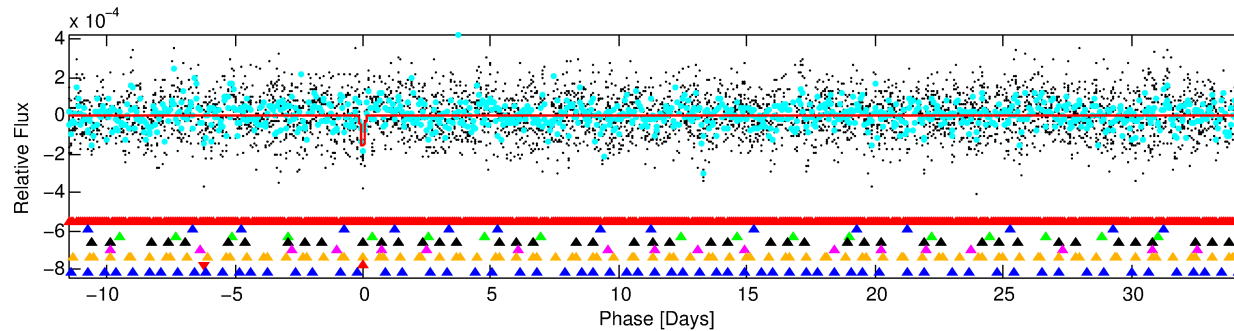
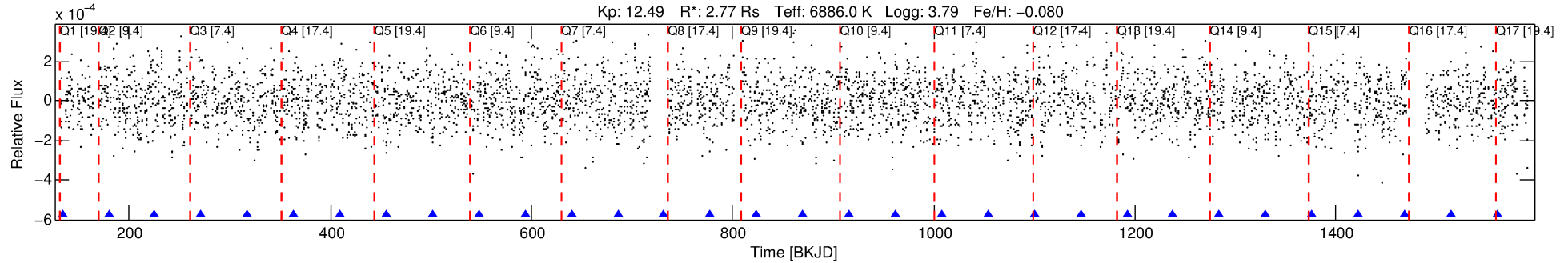
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007841640-07

No Significant Match Found

DV One-Page Summary

KIC: 7841640 Candidate: 7 of 8 Period: 46.025 d



DV Fit Results:

Period = 46.02513 [0.00113] d
Epoch = 133.5764 [0.0170] BKJD
Rp/R* = 0.0131 [0.0192]
a/R* = 31.10 [277.60]
b = 0.89 [2.11]
Seff = 170.46 [89.98]
Teq = 921 [122] K
Rp = 3.97 [6.00] Re
a = 0.3017 [0.0990] AU
Ag = 182.19 [550.15] [0.33 σ]
Teffp = 5234 [3899] K [1.1 σ]

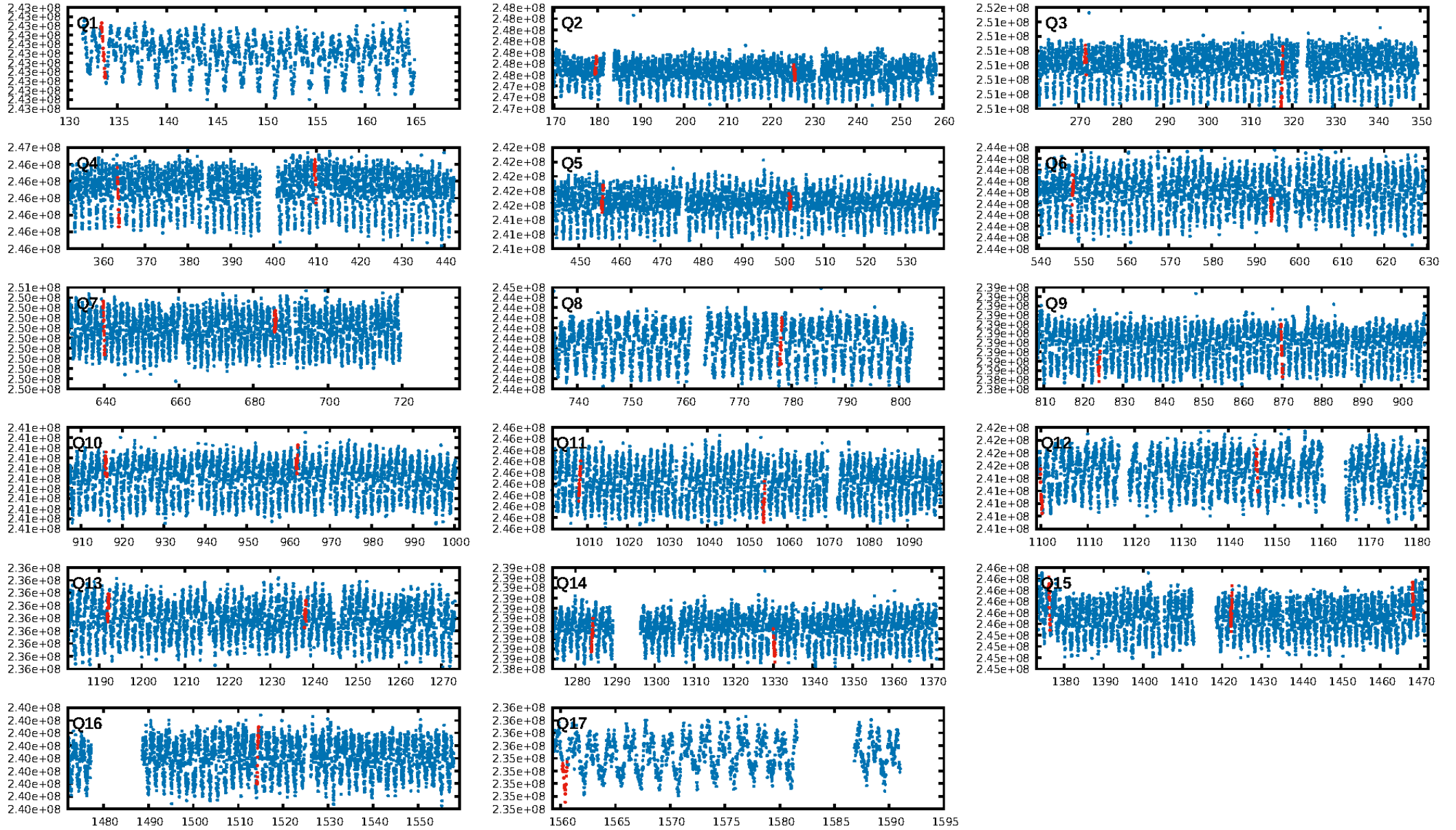
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [58.34 σ]
LongPeriod-sig: 100.0% [126.42 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 97.2%
Bootstrap-pfa: 2.44e-20
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 3.713
Centroid-sig: N/A
Centroid-so: 1.071 arcsec [2.30 σ]
OotOffset-rm: 0.490 arcsec [0.68 σ]
KicOffset-rm: 0.560 arcsec [0.77 σ]
OotOffset-st: 2/4/4/4 [14]
KicOffset-st: 2/4/4/4 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.19 [3/16]

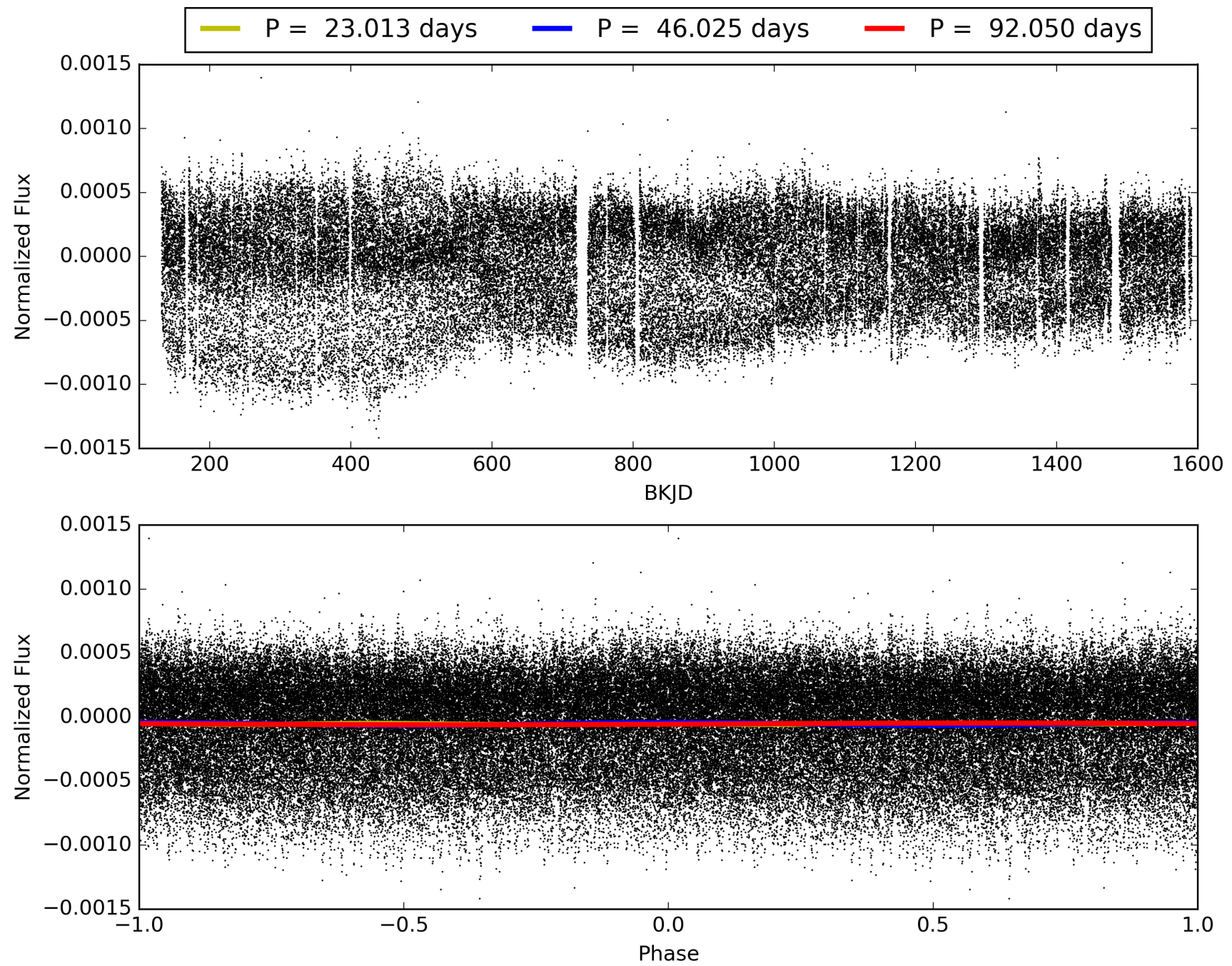
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:48 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007841640-07, PDC Light Curves

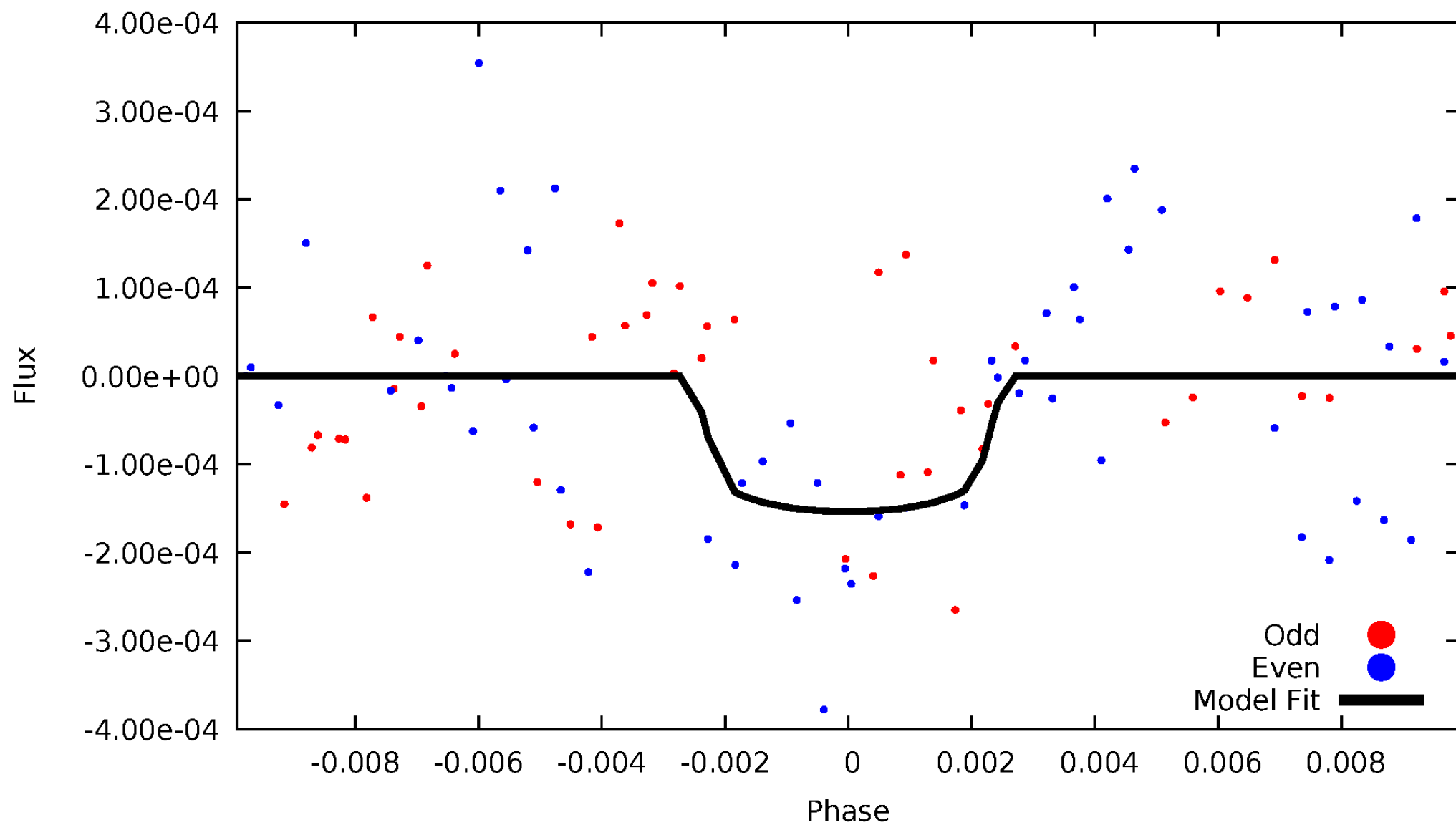


TCE 007841640-07



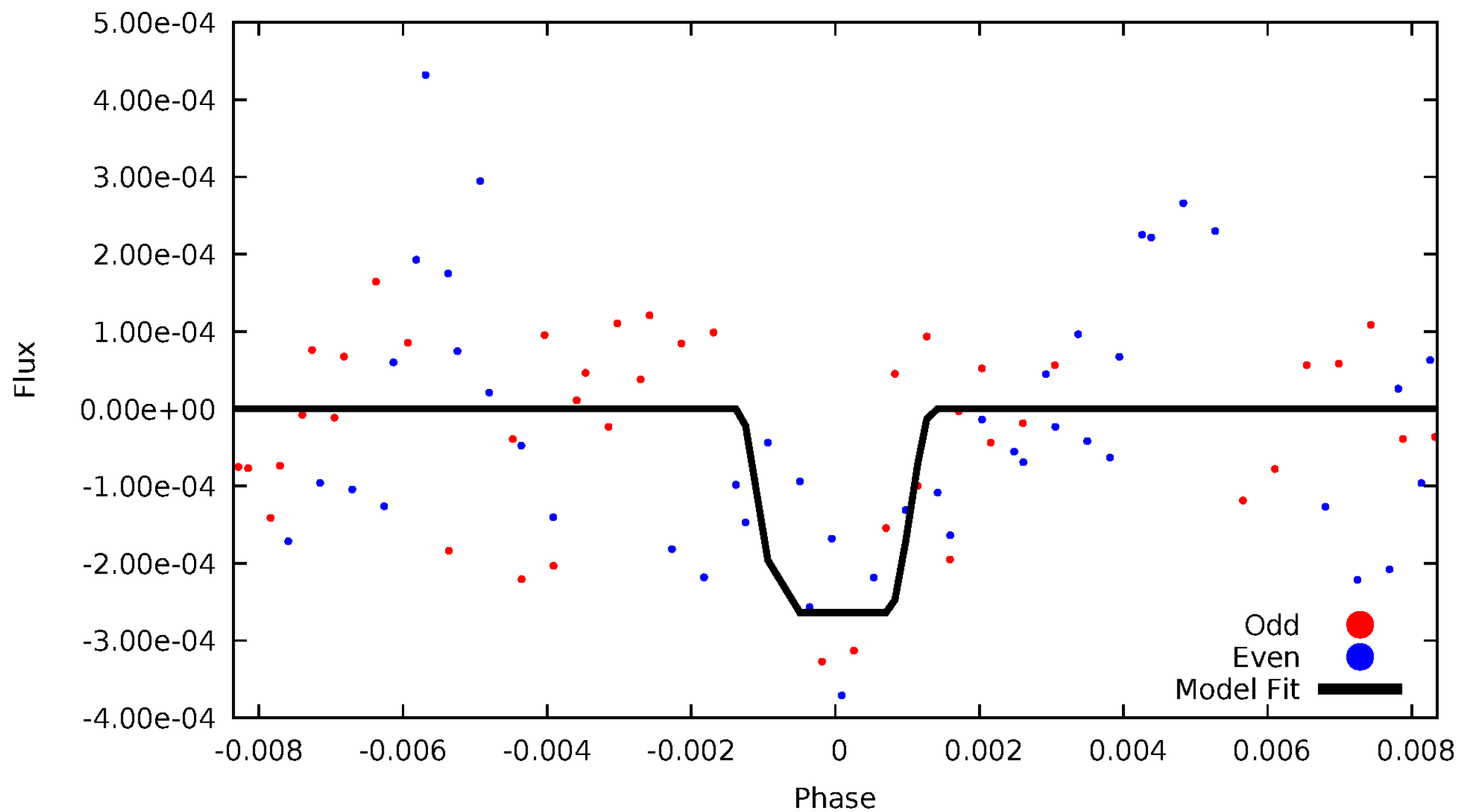
DV Odd/Even

TCE 007841640-07



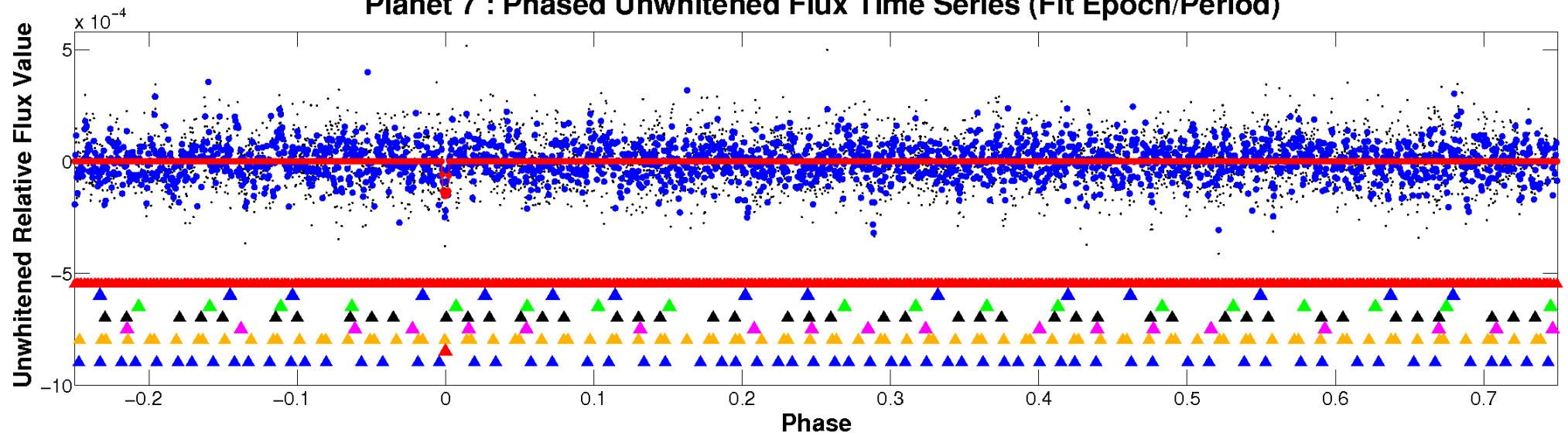
ALT Odd/Even

TCE 007841640-07

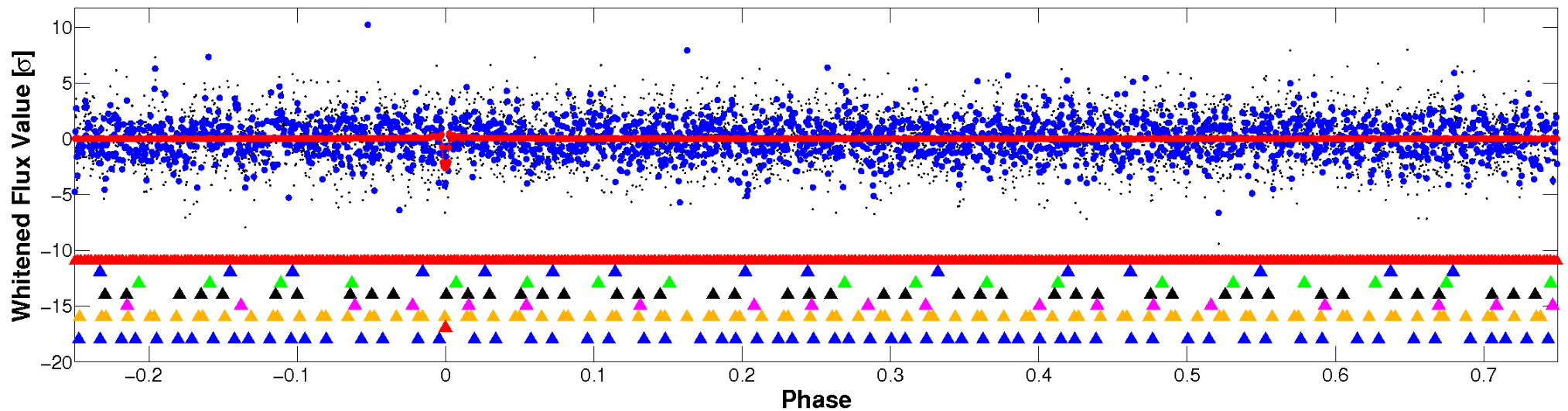


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

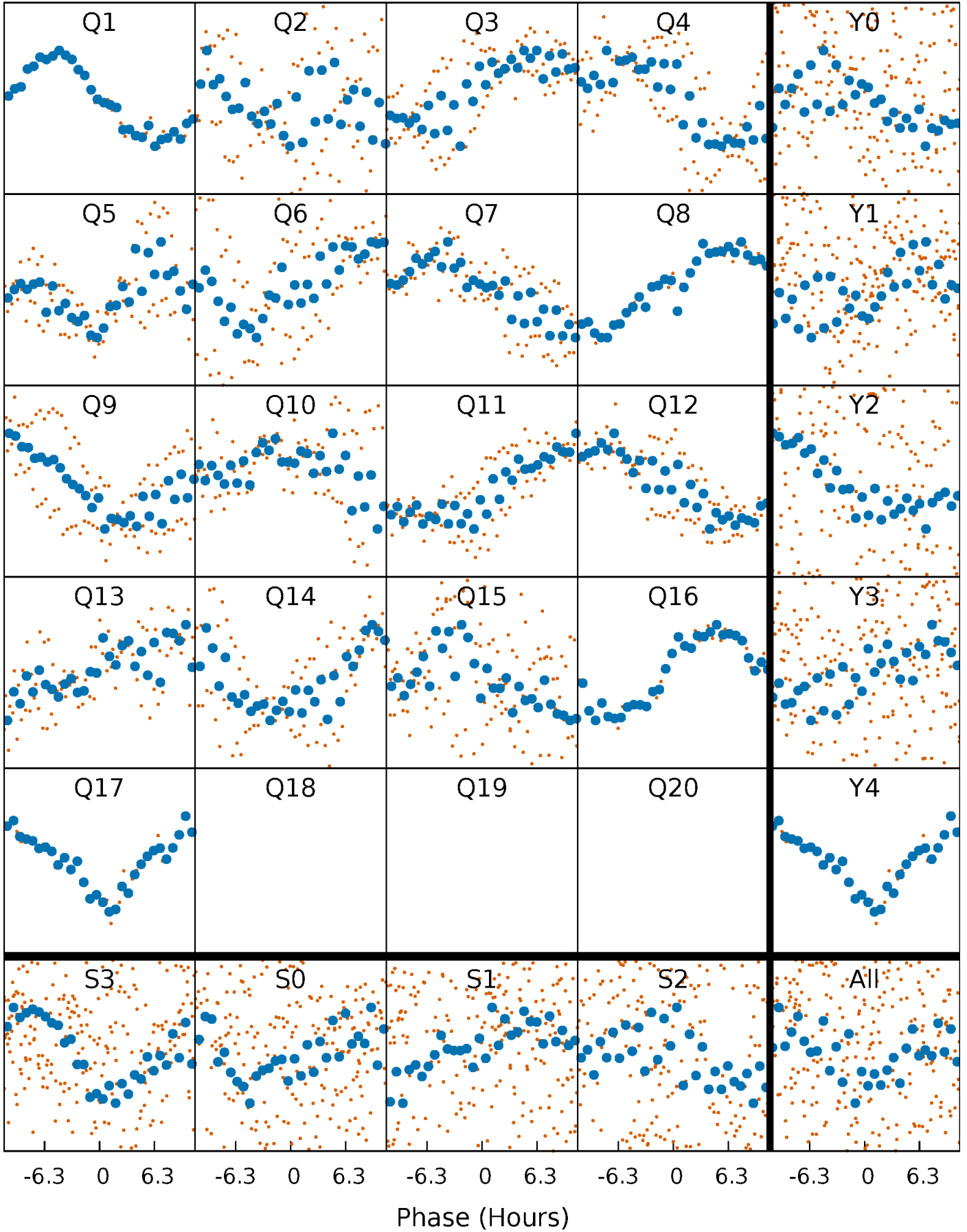


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



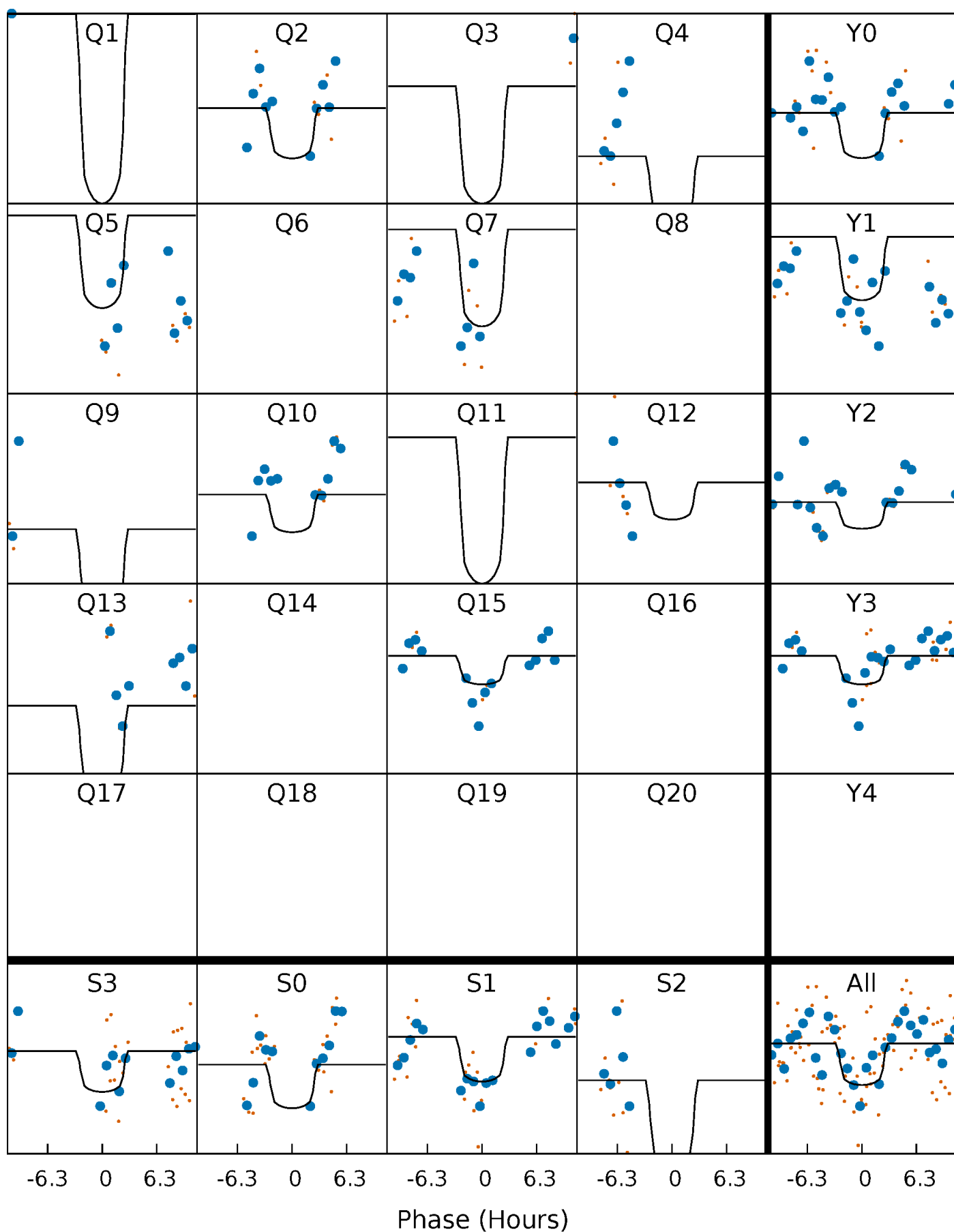
PDC Quarter-Phased Transit Curves

TCE 007841640-07 $P = 46.025128$ Days $T_0 = 133.576410$ (BKJD)



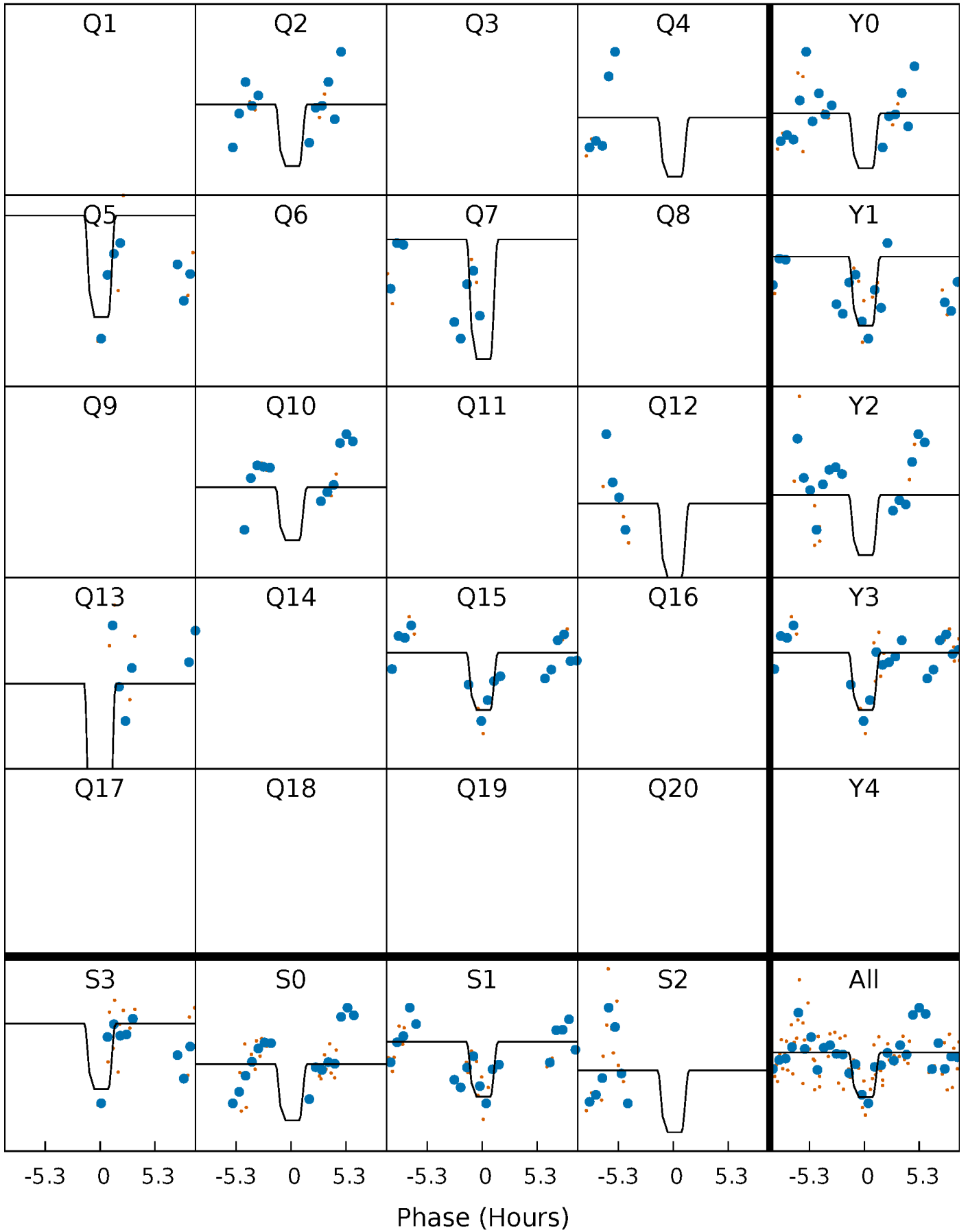
DV Quarter-Phased Transit Curves

TCE 007841640-07 P= 46.025128 Days $T_0=133.576410$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

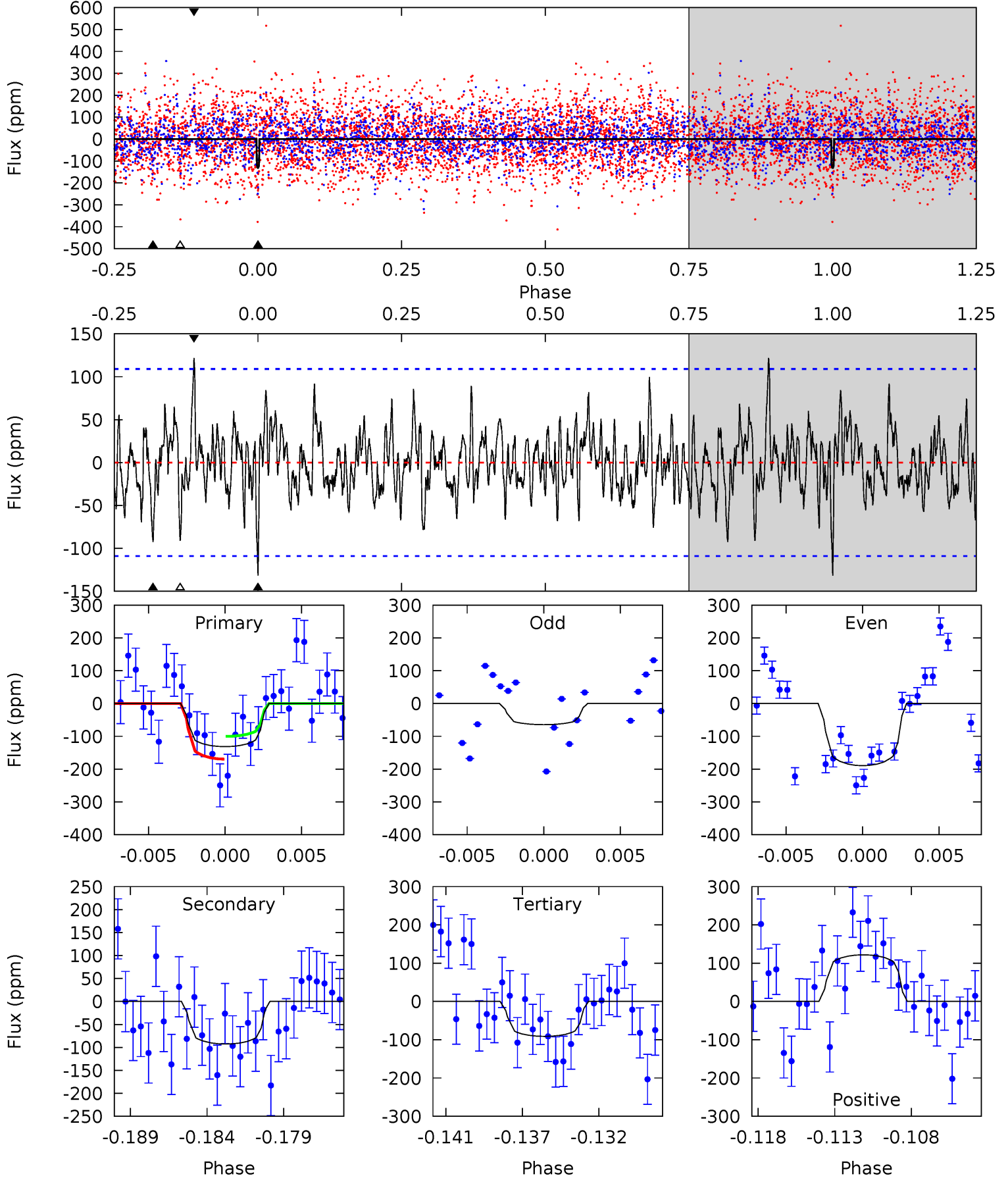
TCE 007841640-07 P= 46.023757 Days $T_0=133.592502$ (BKJD)



DV Model-Shift Uniqueness Test

007841640-07, P = 46.025128 Days, E = 87.551282 Days

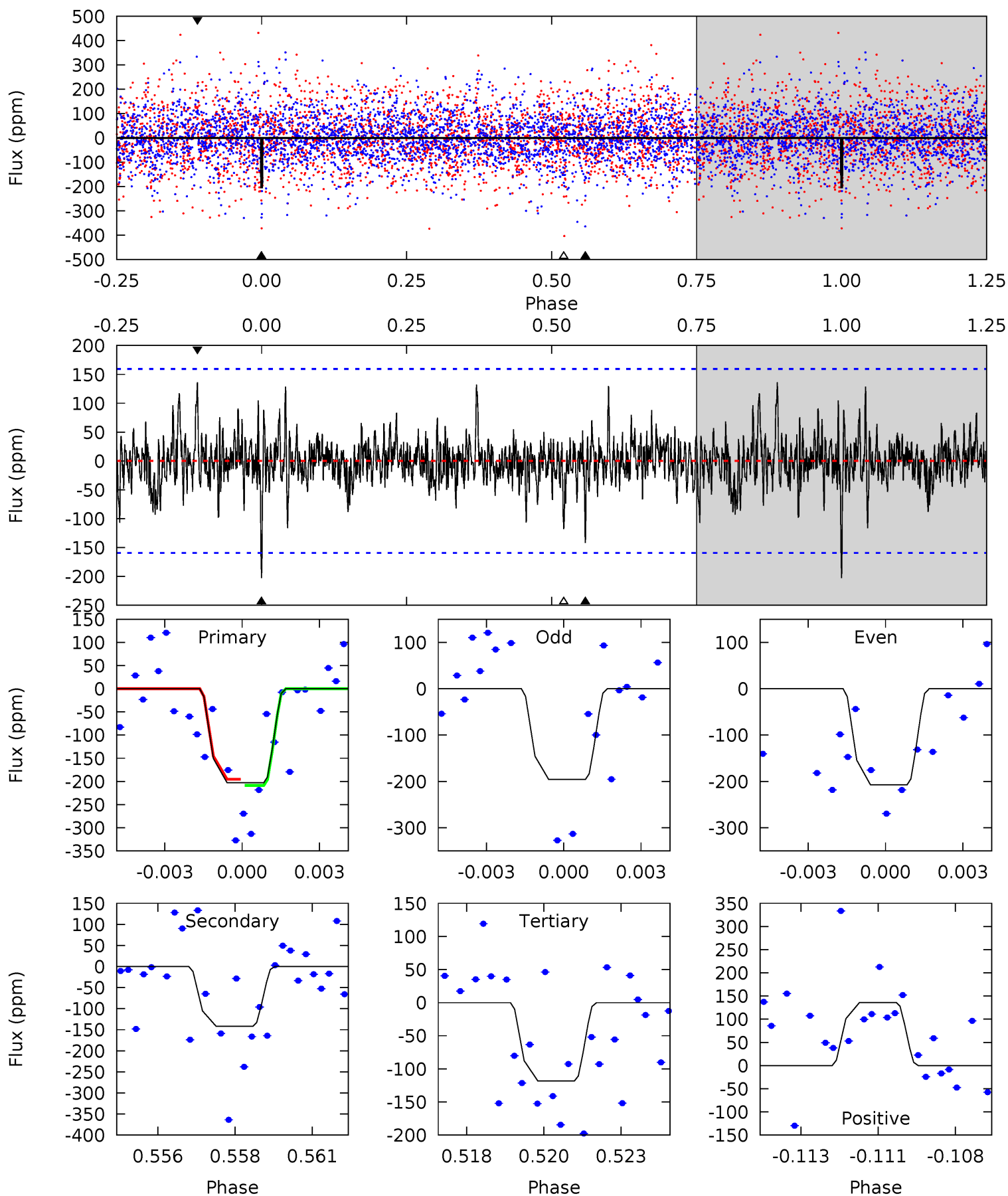
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.24	4.39	4.32	5.78	5.17	2.83	1.47	1.92	0.46	0.07	-1.39	3.02	0.63	0.48	1.64



Alt Model-Shift Uniqueness Test

007841640-07, P = 46.023757 Days, E = 87.568745 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.72	4.70	3.92	4.51	5.28	3.02	1.08	2.81	2.21	0.79	0.19	0.19	0.79	0.40	0.21



Stellar Parameters For KIC 007841640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6886^{+163}_{-245}	$3.789^{+0.292}_{-0.097}$	$-0.080^{+0.250}_{-0.300}$	$2.775^{+0.428}_{-0.998}$	$1.726^{+0.163}_{-0.353}$	$0.114^{+0.237}_{-0.036}$
	+2%/-4%	+8%/-3%	+312%/-375%	+15%/-36%	+9%/-20%	+208%/-32%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007841640-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-93 ± 21	$5.23^{+4.41}_{-3.48}$	1258^{+77}_{-108}	4962^{+3982}_{-1023}	166^{+1409}_{-120}
Alt.	-142 ± 30	$5.95^{+5.30}_{-3.81}$	1266^{+72}_{-123}	5183^{+3881}_{-1134}	199^{+1332}_{-143}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

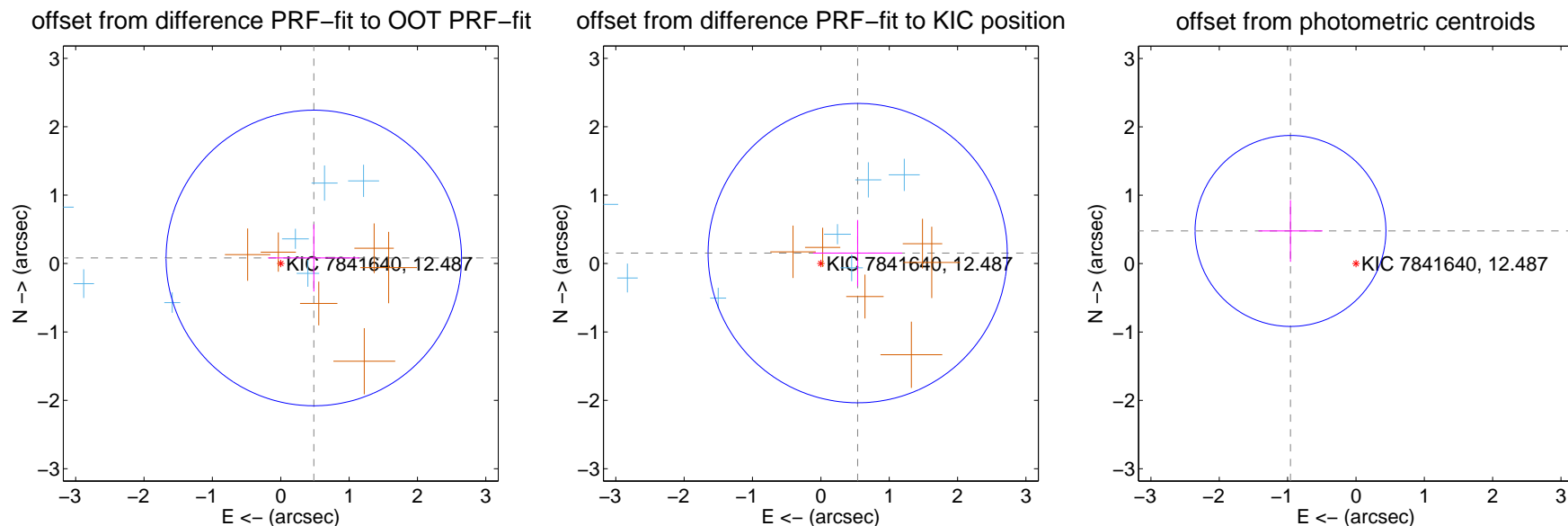
DV Centroid Data

Supplemental centroid analysis for 007841640-07. Kepler magnitude: 12.49. Transit SNR 11.30

There are 7 quarters with good PRF difference image offsets

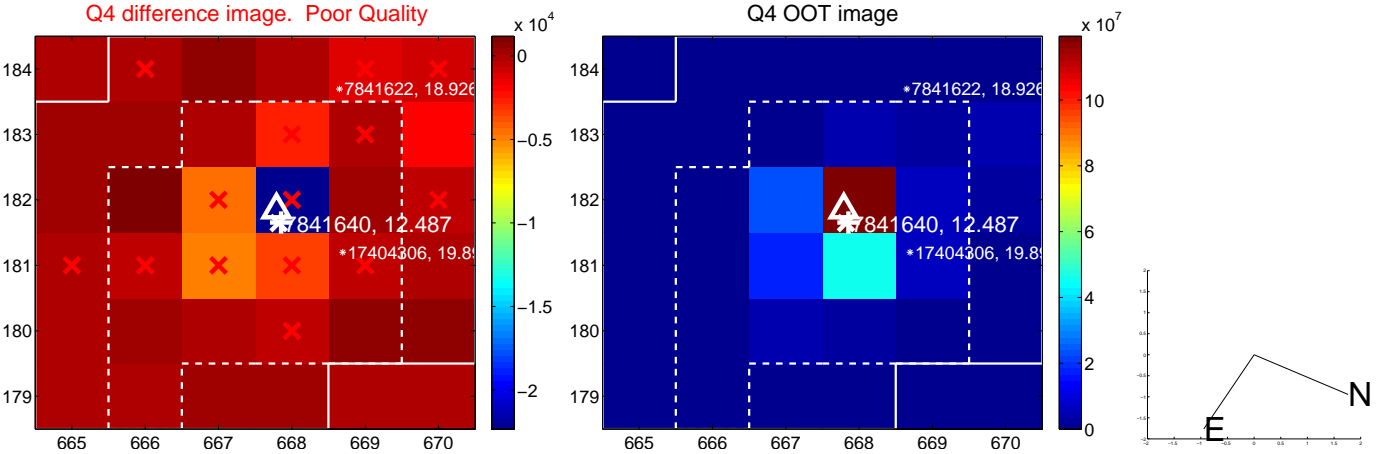
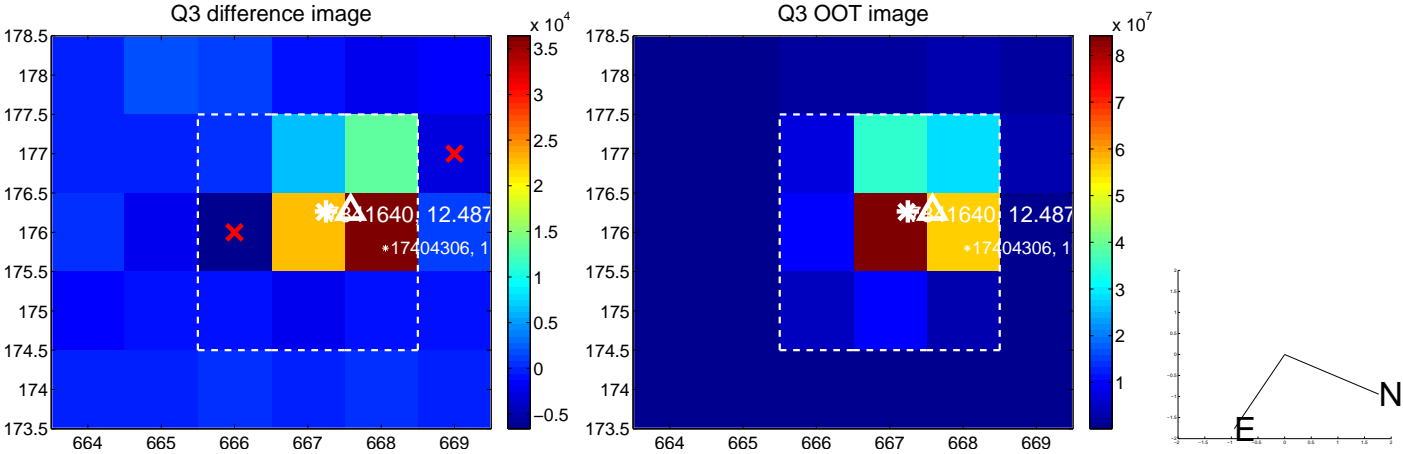
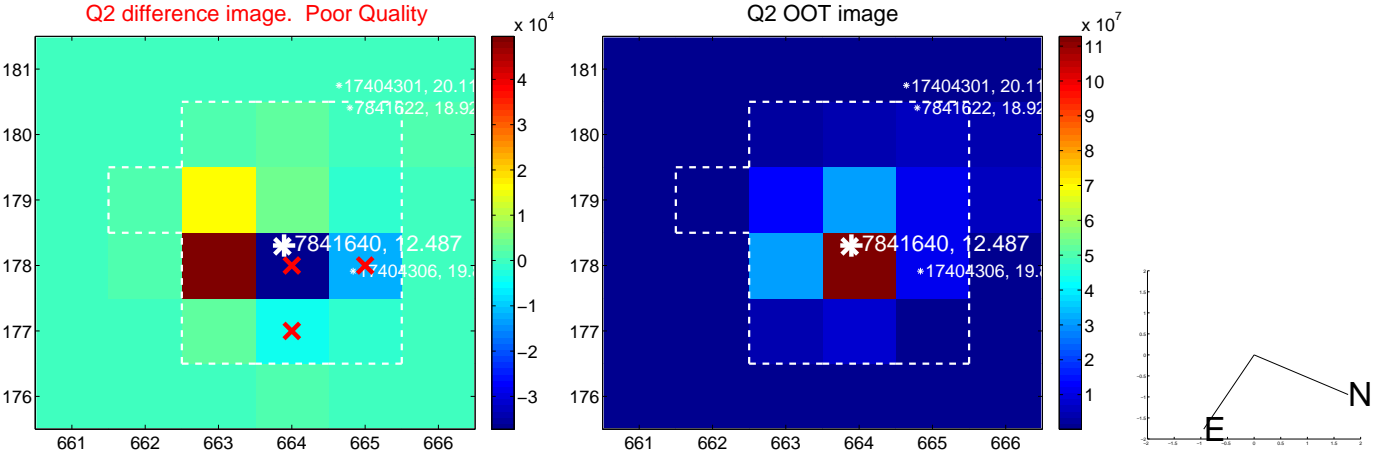
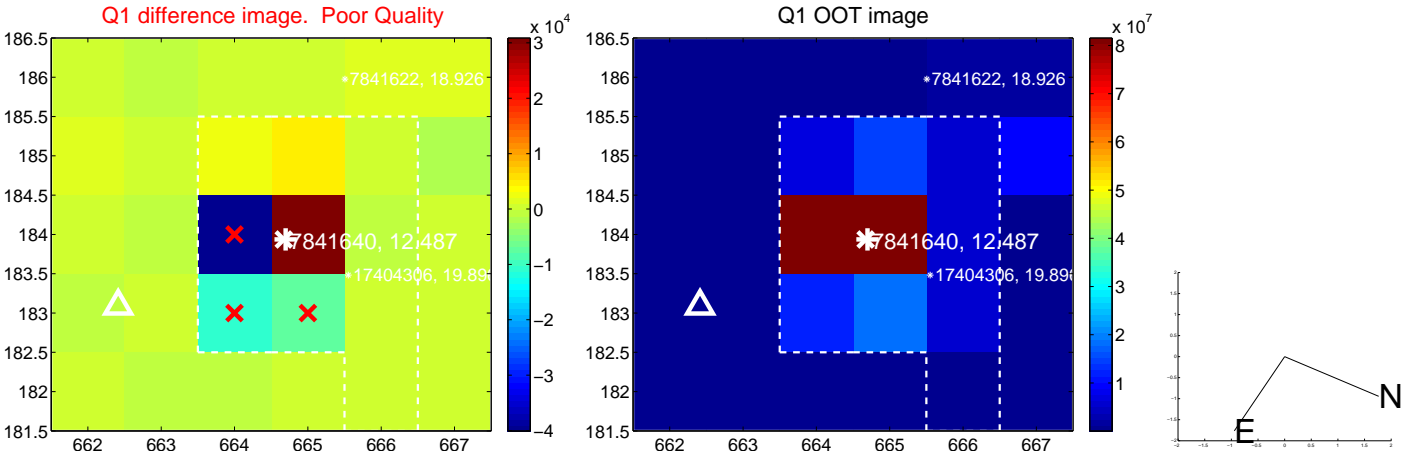
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.490 ± 0.720	0.68	-0.483 ± 0.668	0.081 ± 0.491
PRF-fit source offset from KIC position	0.560 ± 0.729	0.77	-0.539 ± 0.652	0.152 ± 0.484
photometric centroid source offset	1.07 ± 0.47	2.30	0.96 ± 0.47	0.48 ± 0.45

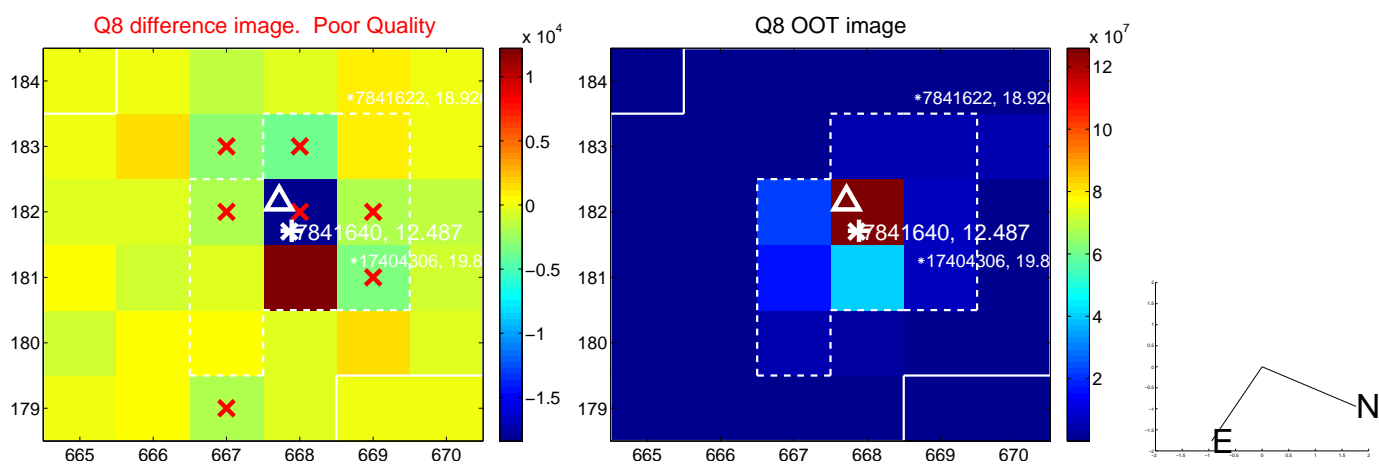
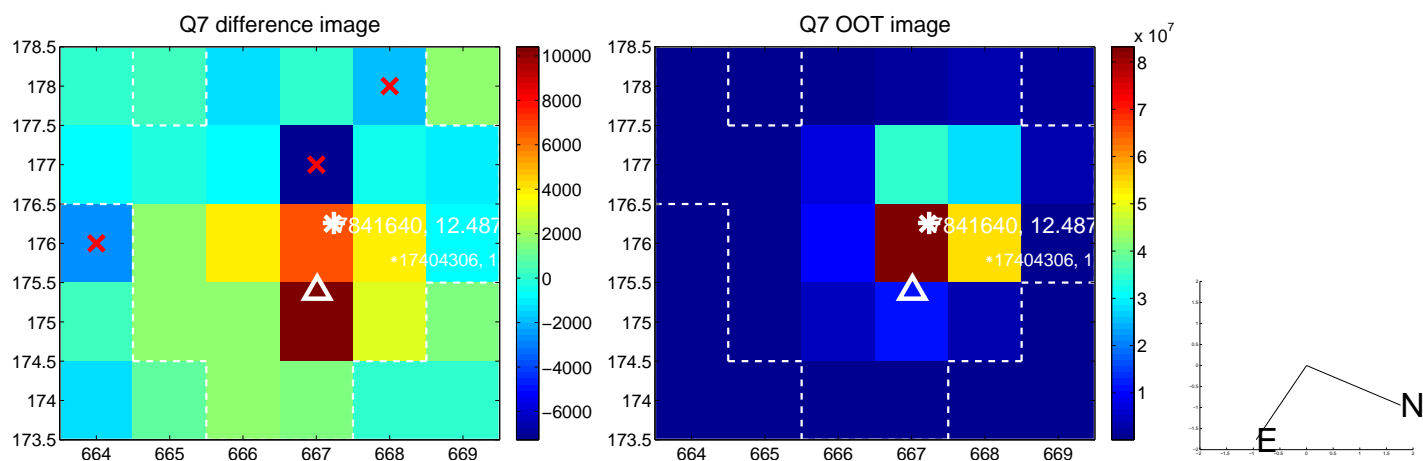
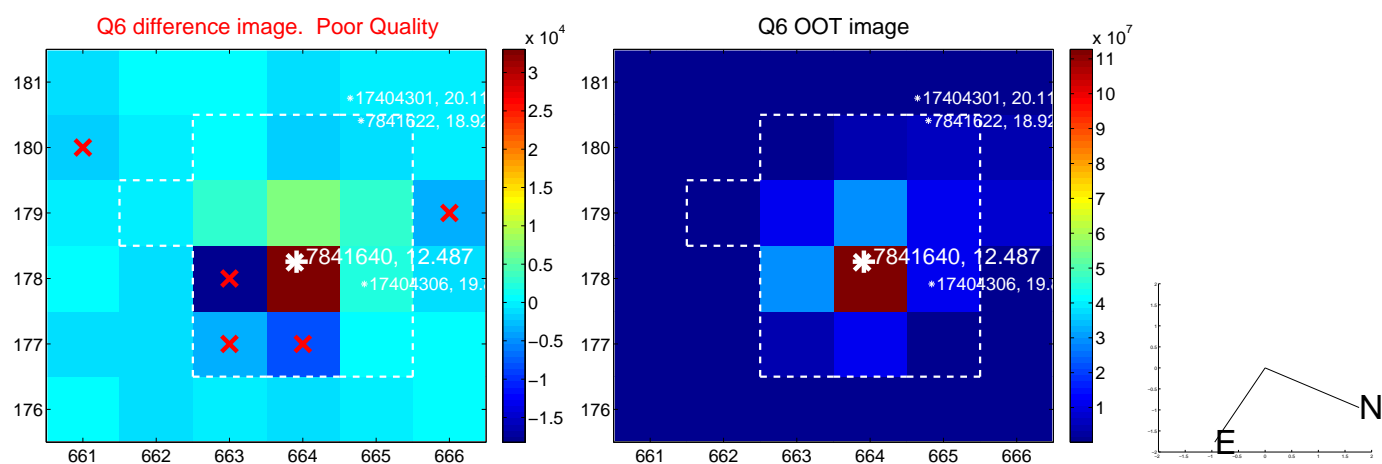
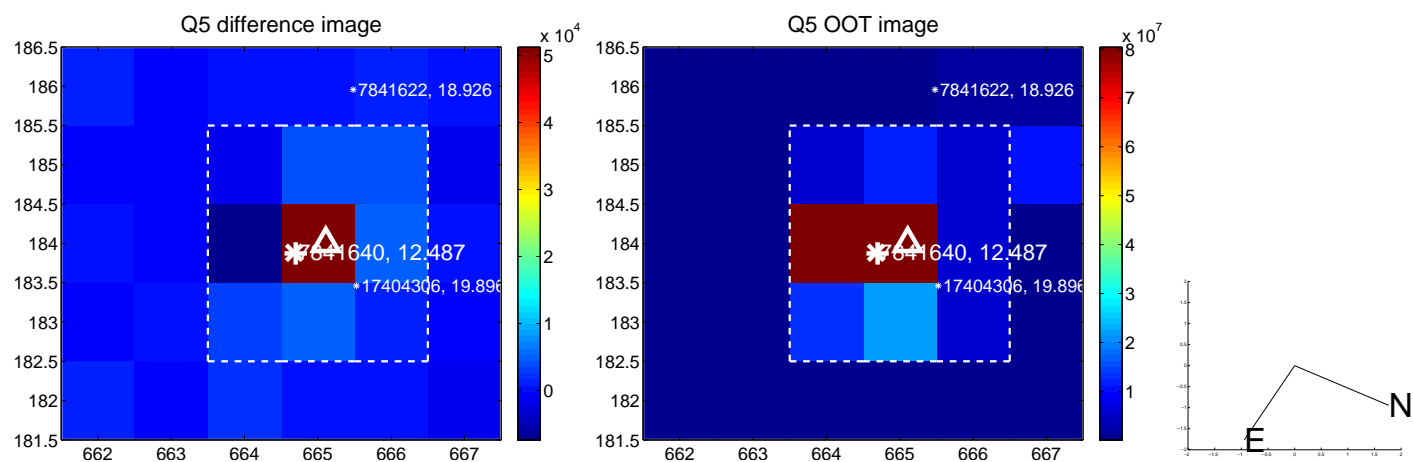


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

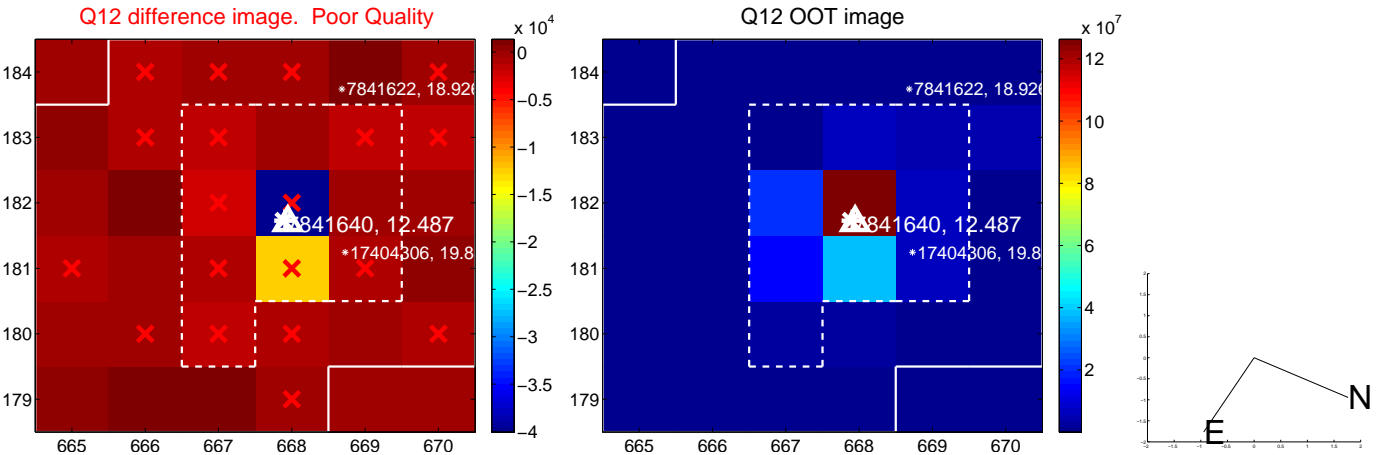
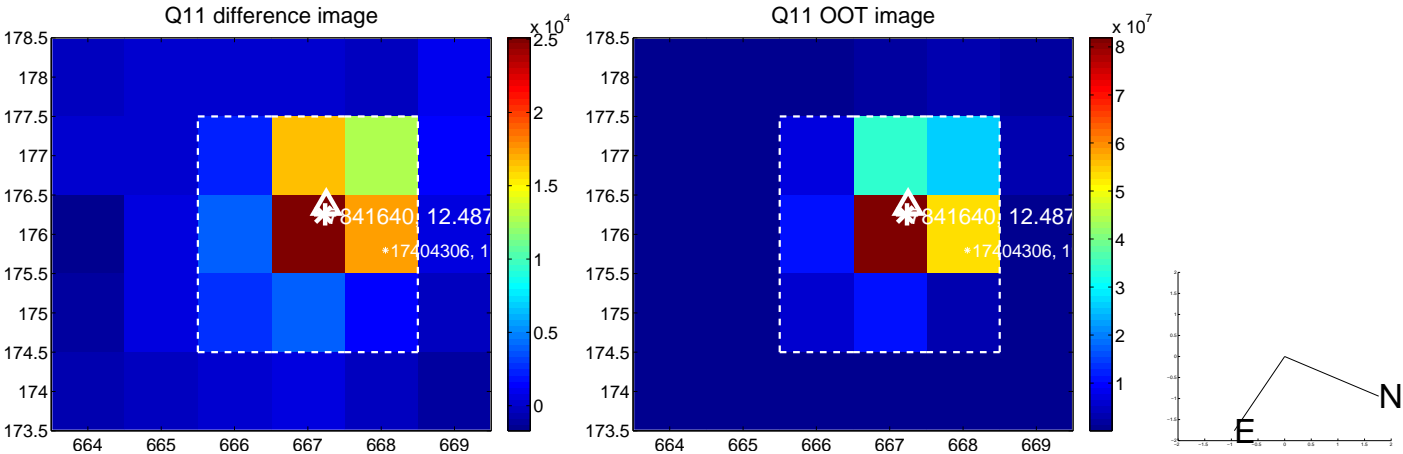
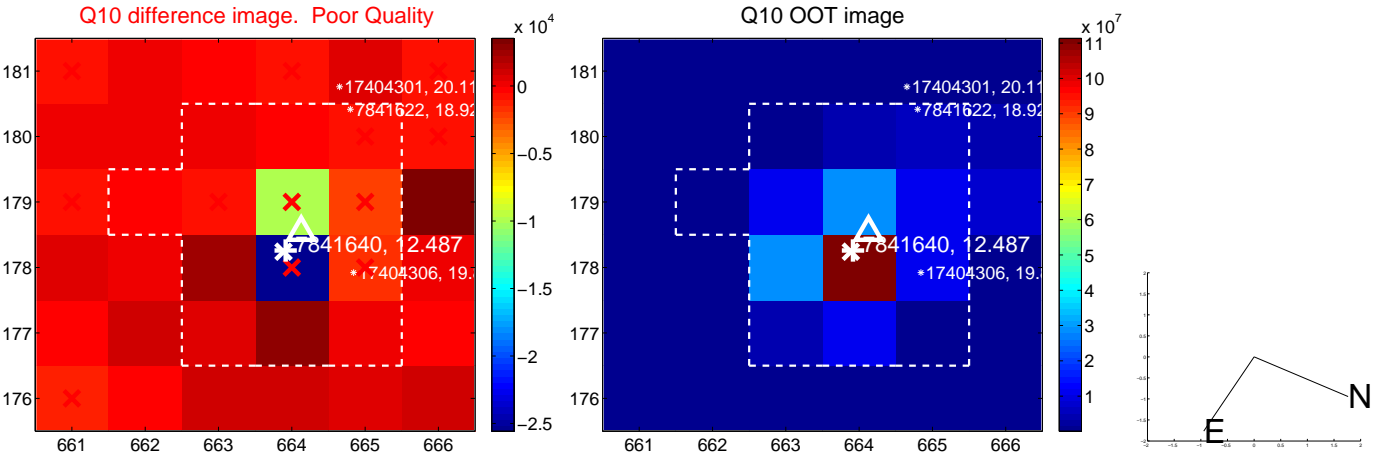
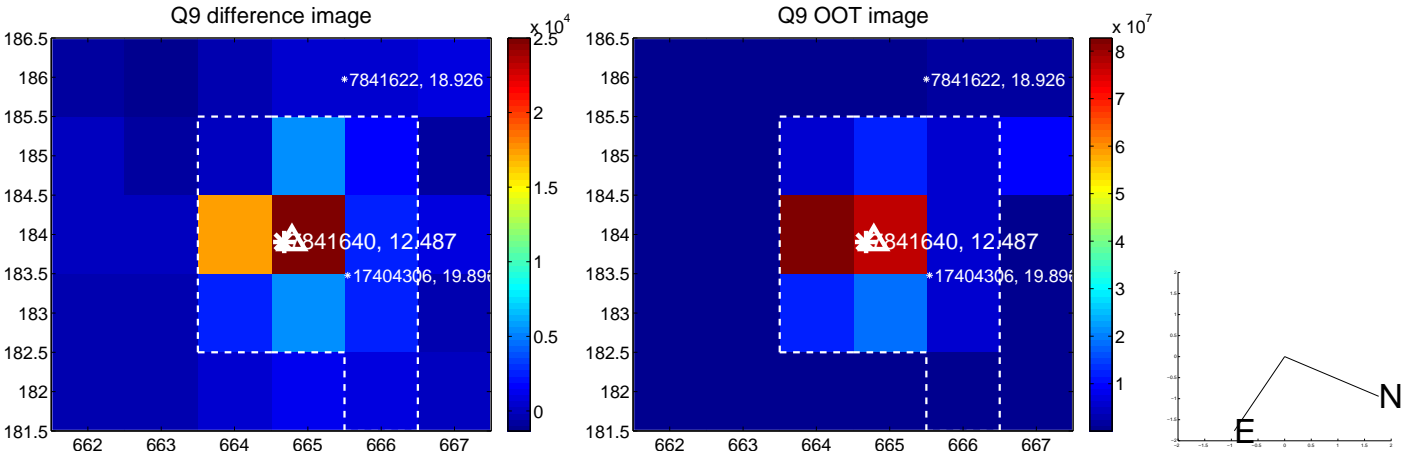
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



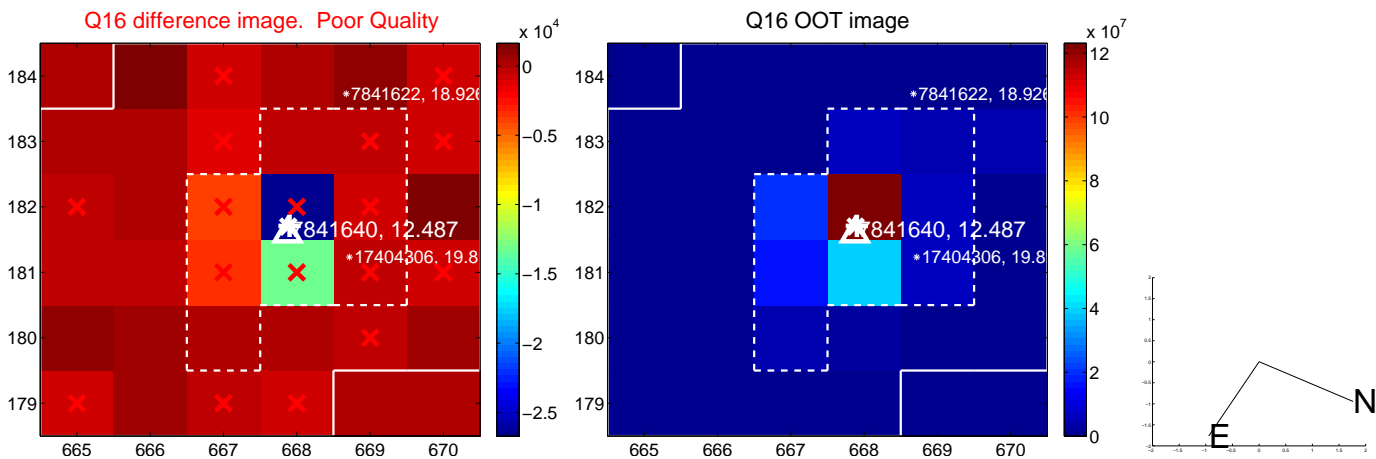
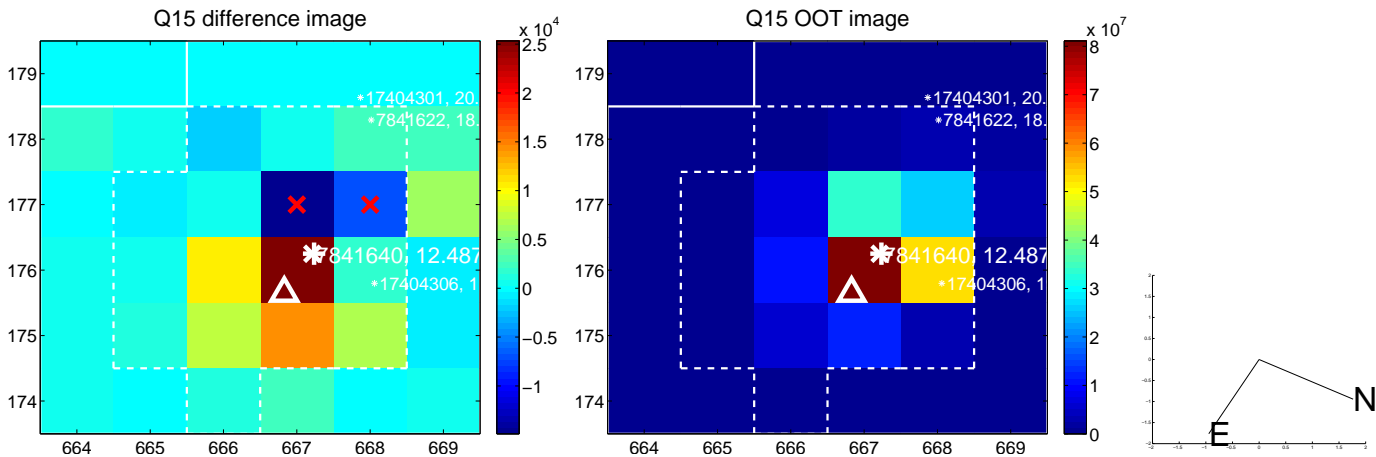
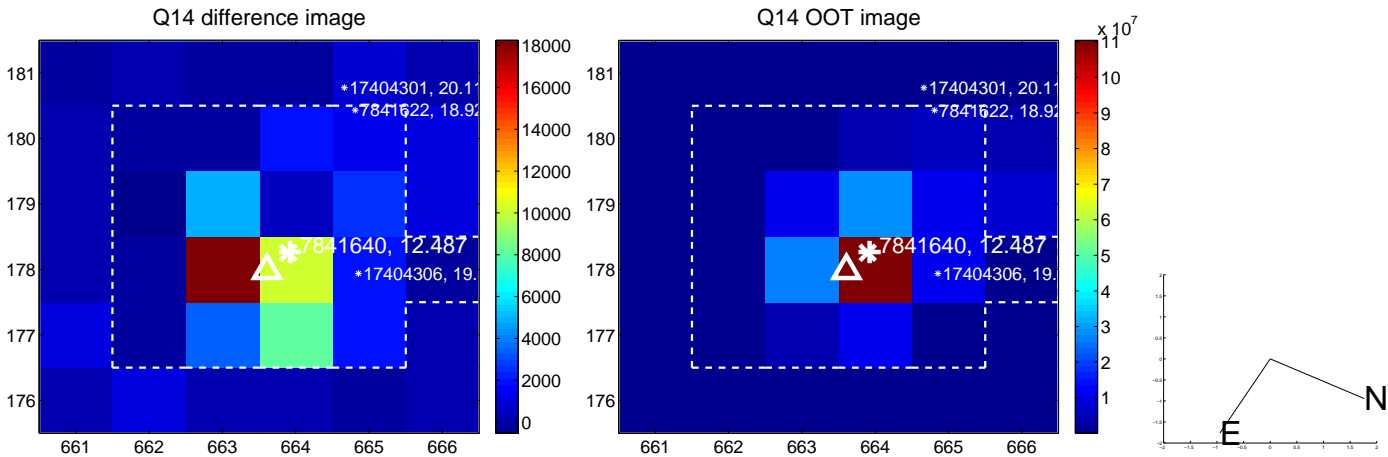
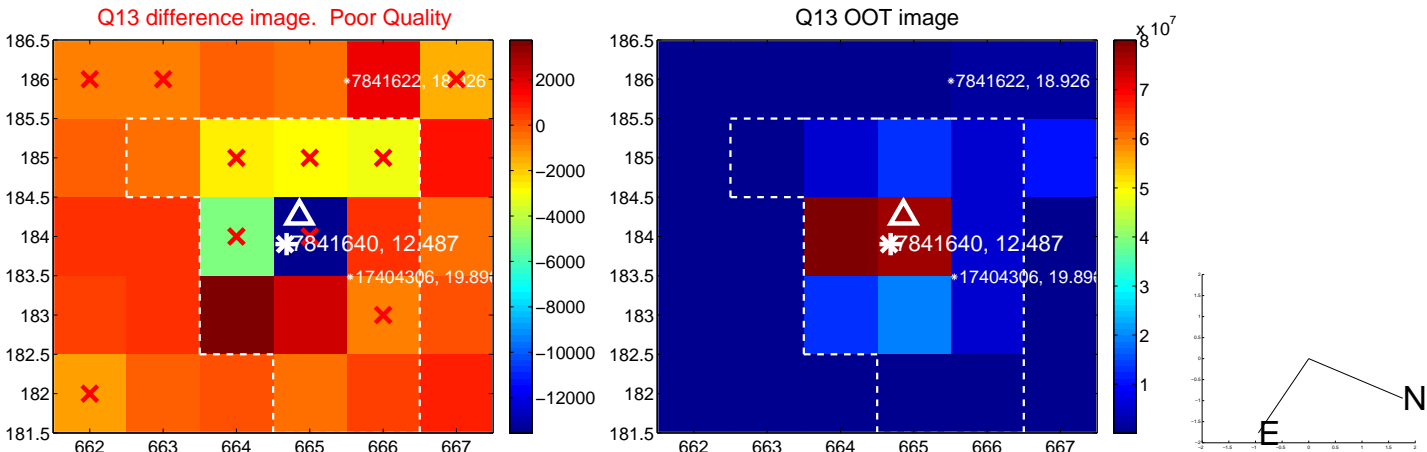
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



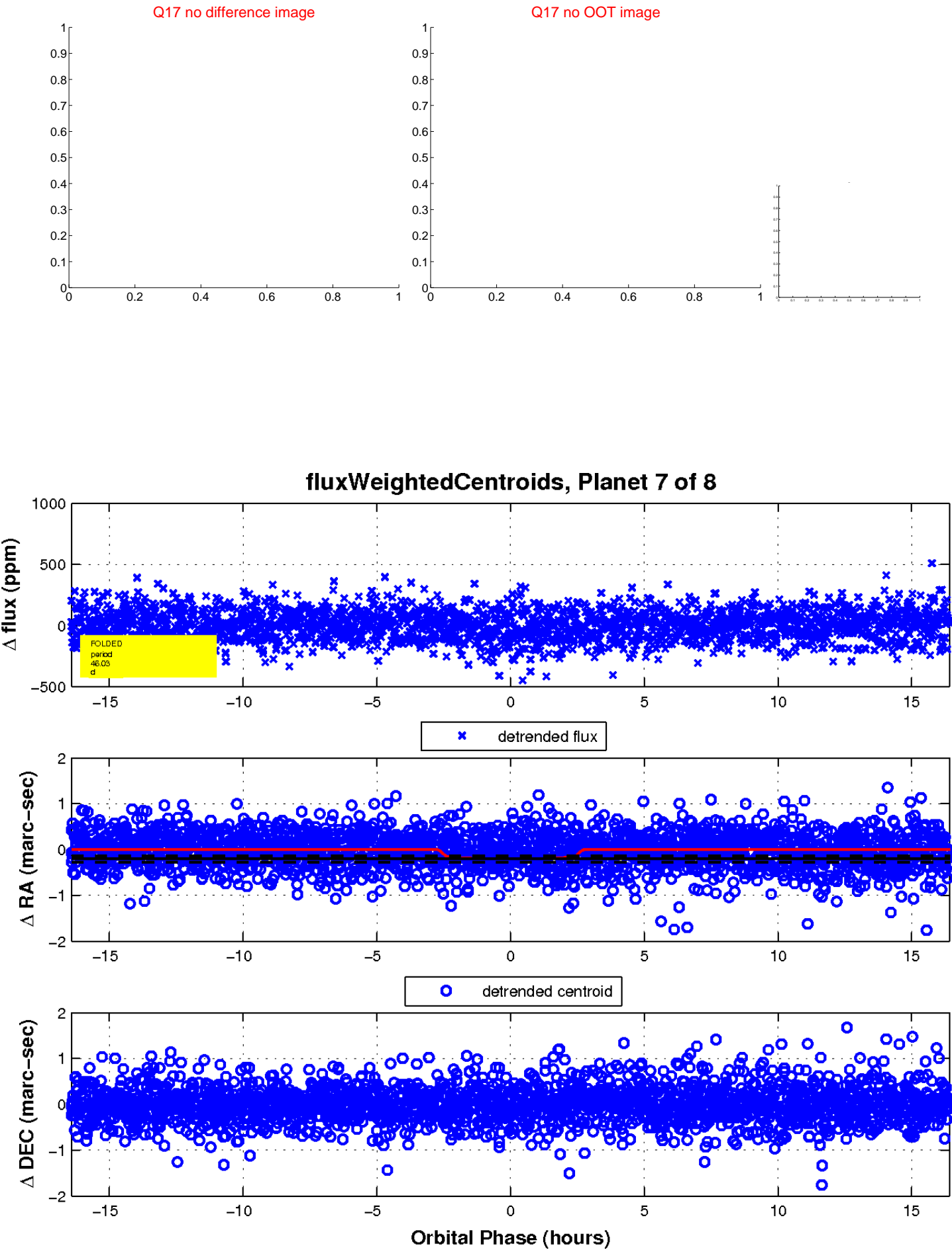
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

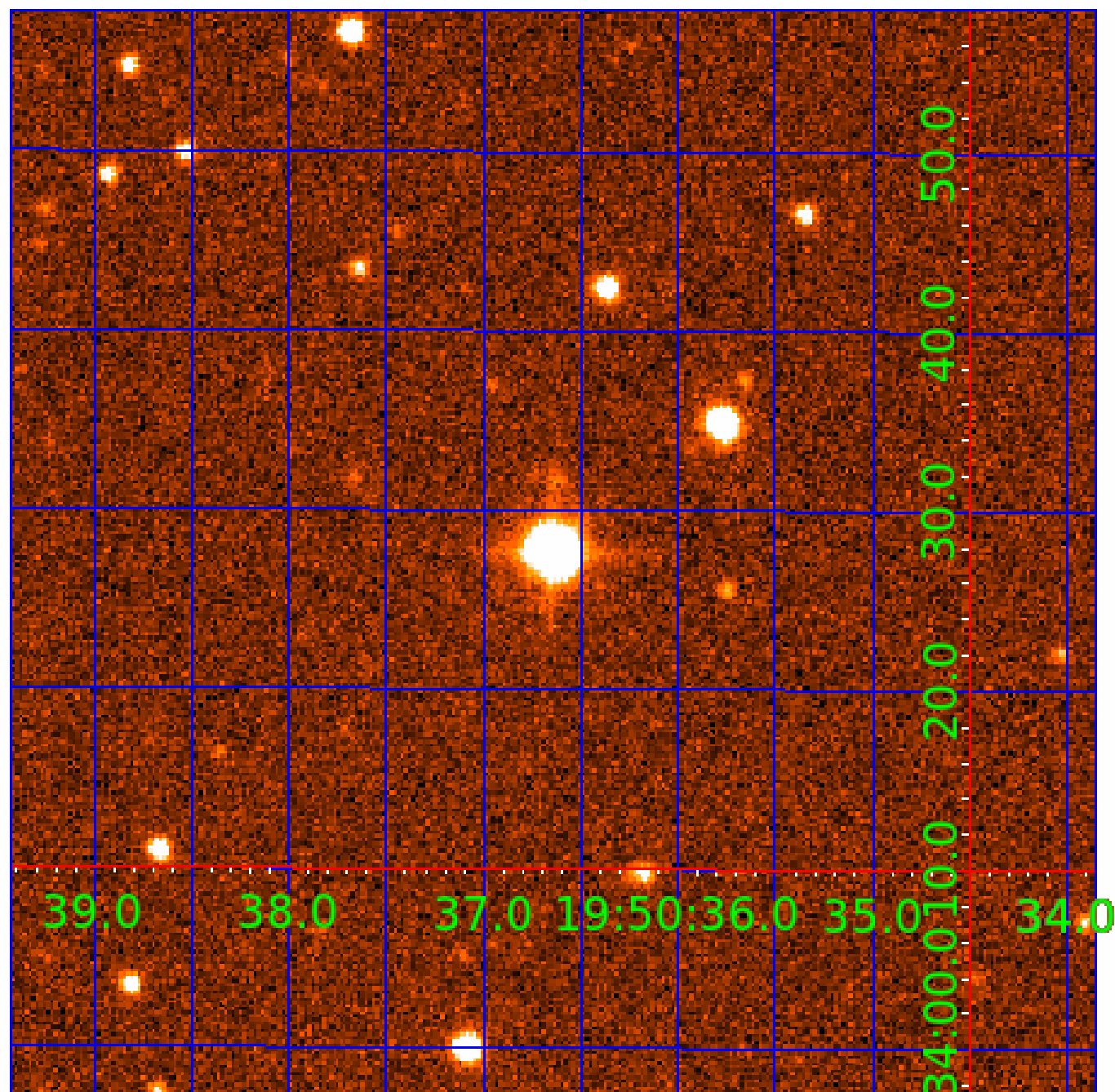


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007841640

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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007841640-03	OBS	No	79.992434	176.697388	225.8	3.966	16.8	15.2	2.77	6886	4.85	81.57
007841640-04	OBS	No	32.448993	134.941138	264.1	1.099	15.4	11.6	2.77	6886	4.61	271.65
007841640-05	OBS	No	79.660484	146.688969	232.0	3.286	14.9	13.1	2.77	6886	4.72	82.03
007841640-06	OBS	No	15.842593	142.699268	143.4	2.022	13.4	13.3	2.77	6886	3.36	706.59
007841640-07	OBS	No	46.025128	133.576410	153.7	5.475	12.8	11.3	2.77	6886	3.97	170.46
007841640-08	OBS	No	22.135742	152.672679	123.6	3.686	13.0	12.1	2.77	6886	3.48	452.36

Robovetter Results

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007841640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007841640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007841640-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007841640-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007841640-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

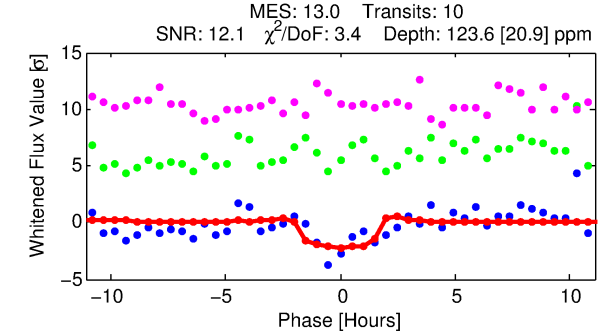
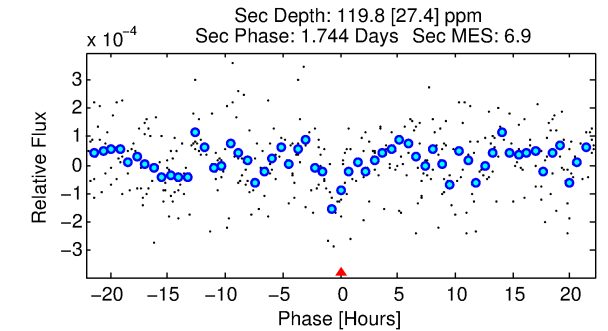
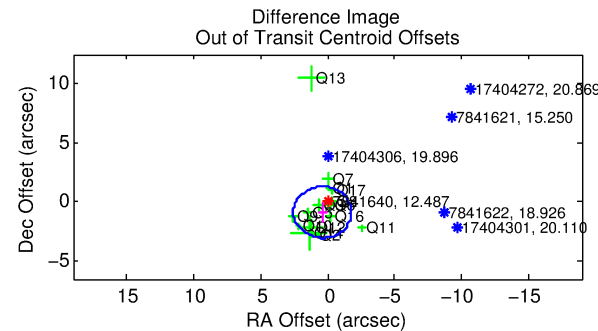
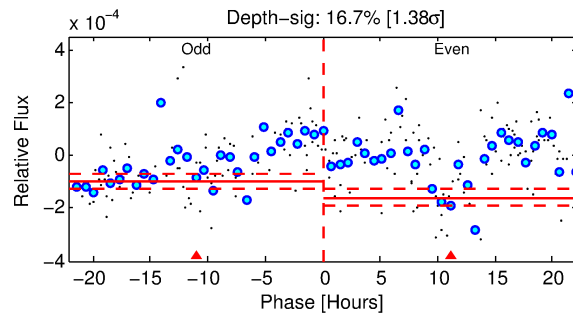
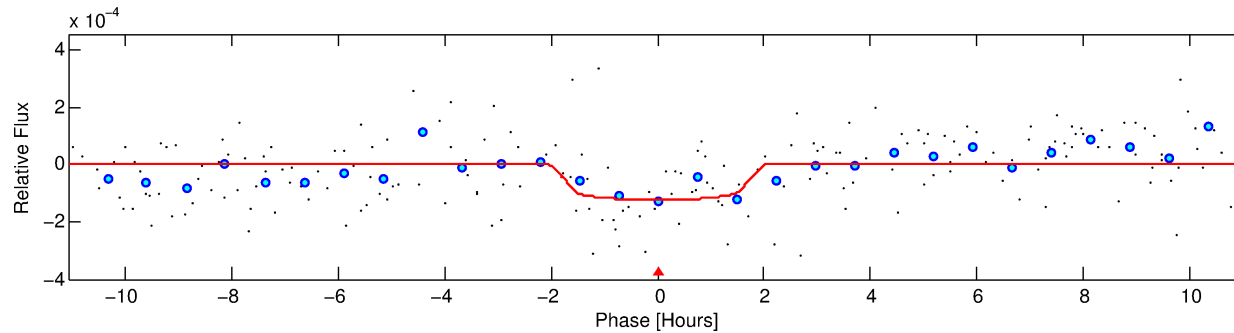
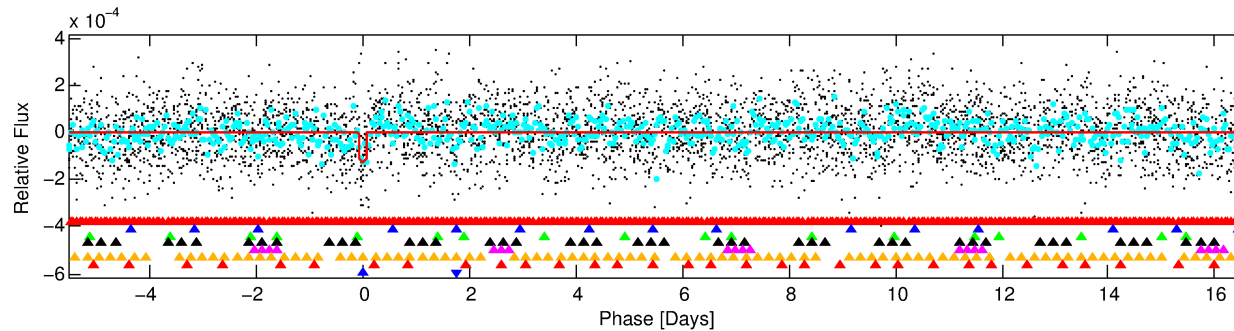
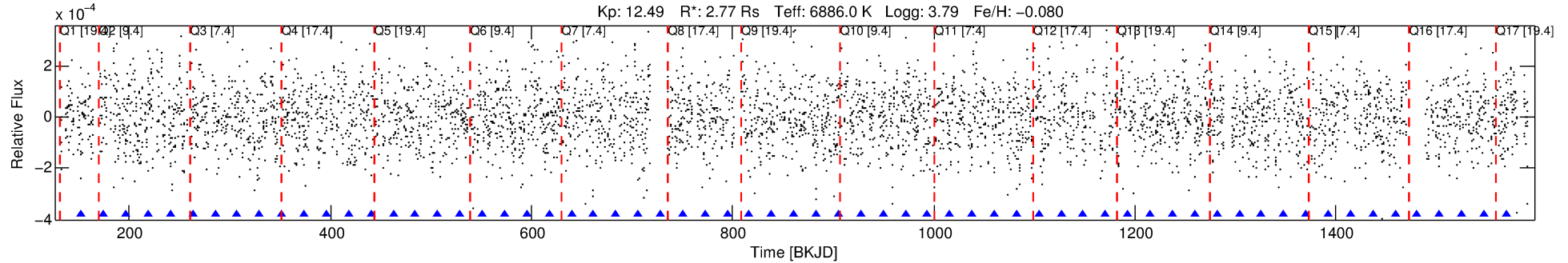
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007841640-08

No Significant Match Found

DV One-Page Summary

KIC: 7841640 Candidate: 8 of 8 Period: 22.136 d



DV Fit Results:

Period = 22.13574 [0.00035] d
Epoch = 152.6727 [0.0129] BKJD
Rp/R* = 0.0115 [0.0080]
a/R* = 25.31 [105.30]
b = 0.85 [1.39]
Seff = 452.35 [238.79]
Teq = 1176 [155] K
Rp = 3.48 [2.73] Re
a = 0.1852 [0.0608] AU
Ag = 187.14 [281.67] [0.66 σ]
Teffp = 6725 [2394] K [2.31 σ]

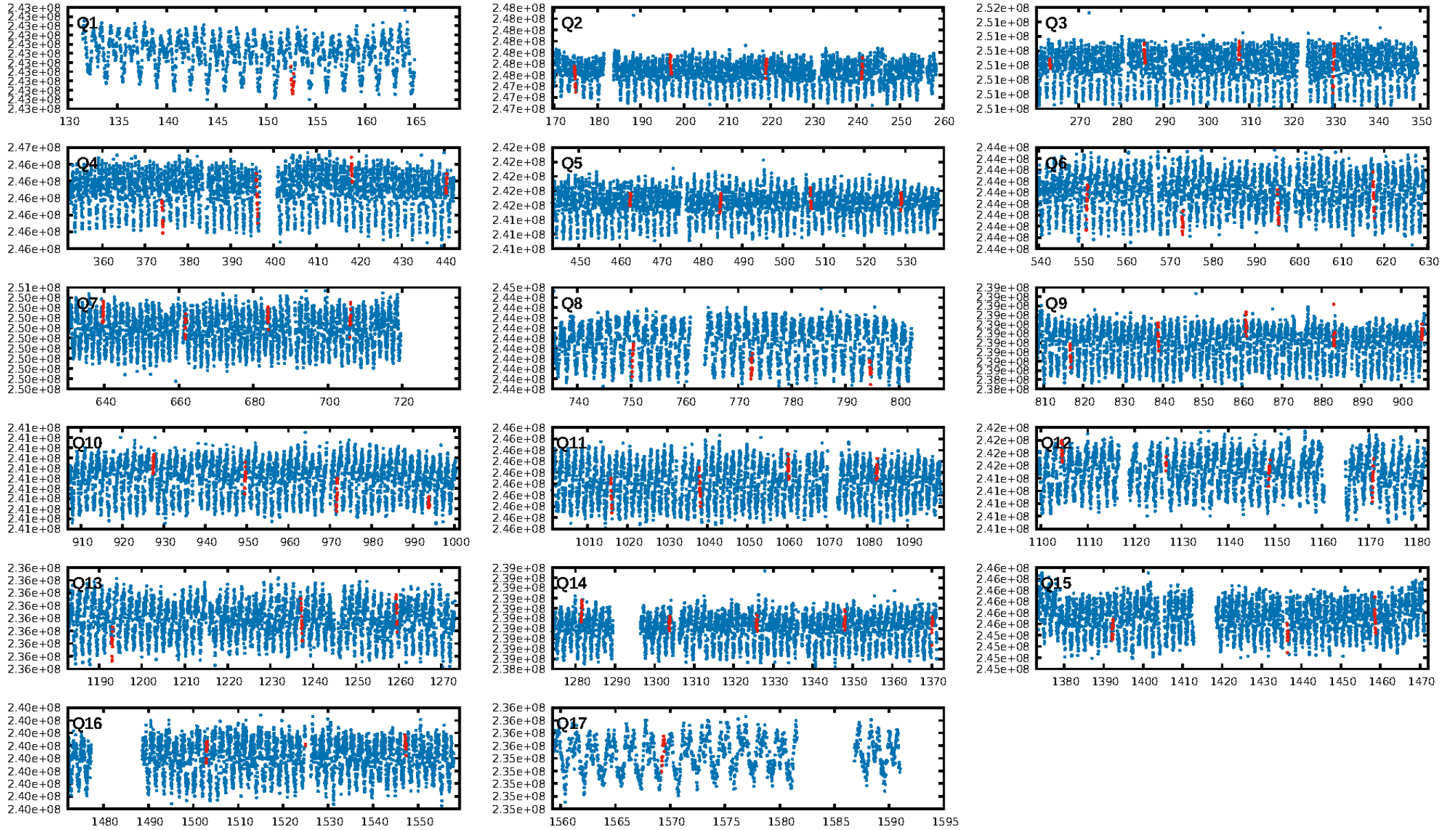
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [35.92 σ]
LongPeriod-sig: 100.0% [64.34 σ]
ModelChiSquare2-sig: 2.6%
ModelChiSquareGof-sig: 10.3%
Bootstrap-pfa: 2.45e-08
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -6.393
Centroid-sig: N/A
Centroid-so: 0.141 arcsec [0.29 σ]
OotOffset-rm: 0.941 arcsec [1.30 σ]
KicOffset-rm: 0.848 arcsec [1.16 σ]
OotOffset-st: 4/3/3/5 [15]
KicOffset-st: 4/3/3/5 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 0.53 [9/17]

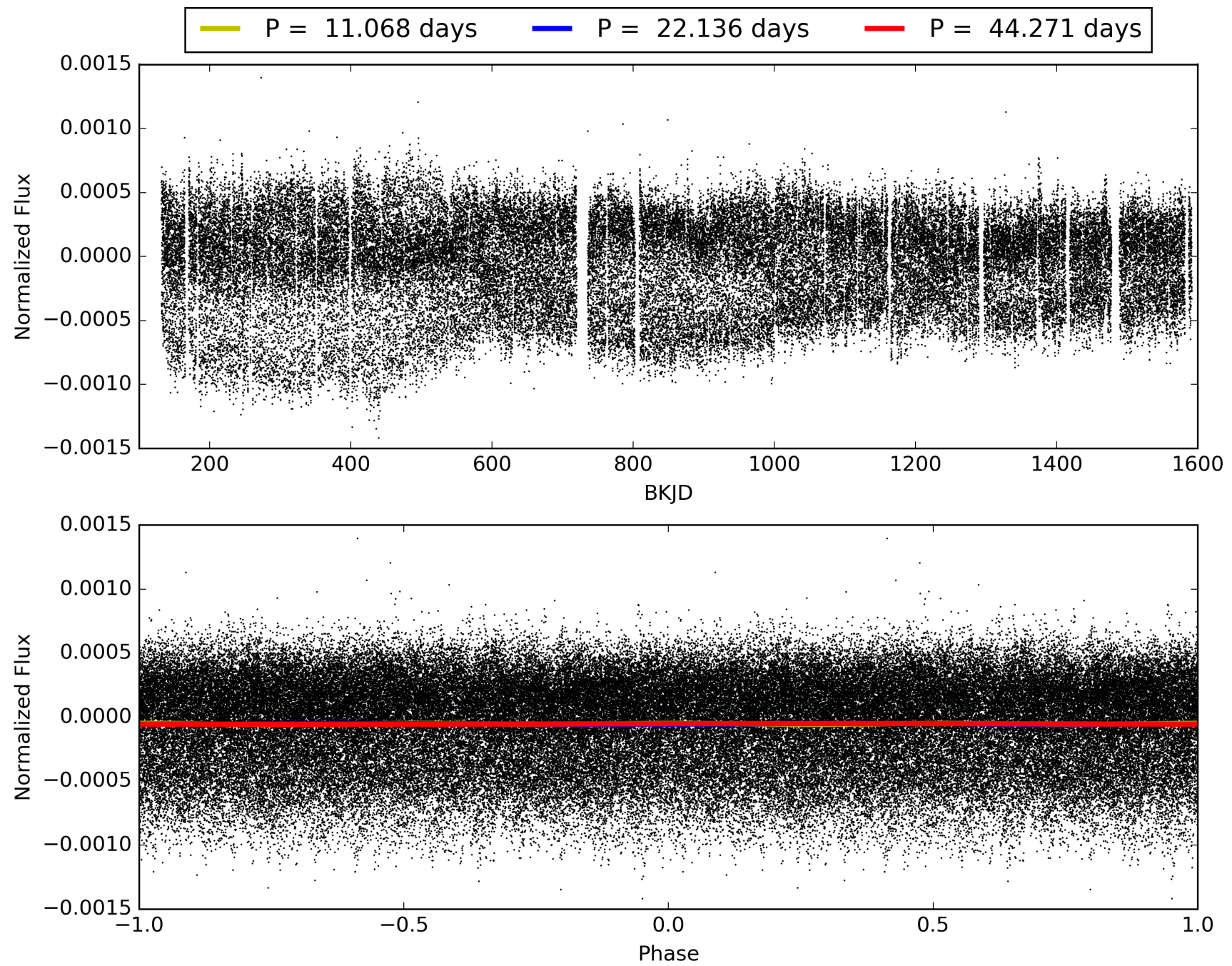
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:51 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007841640-08, PDC Light Curves

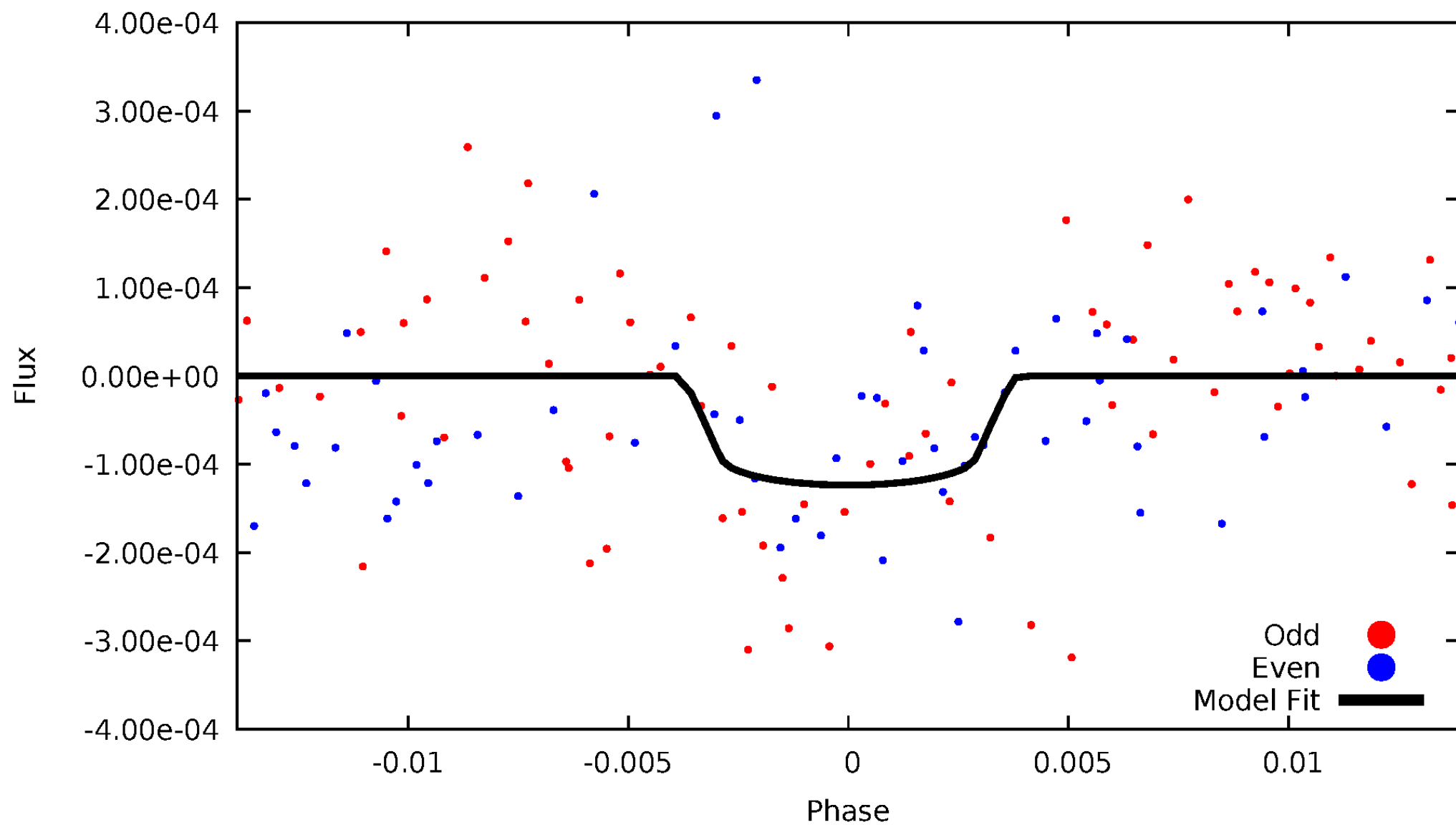


TCE 007841640-08



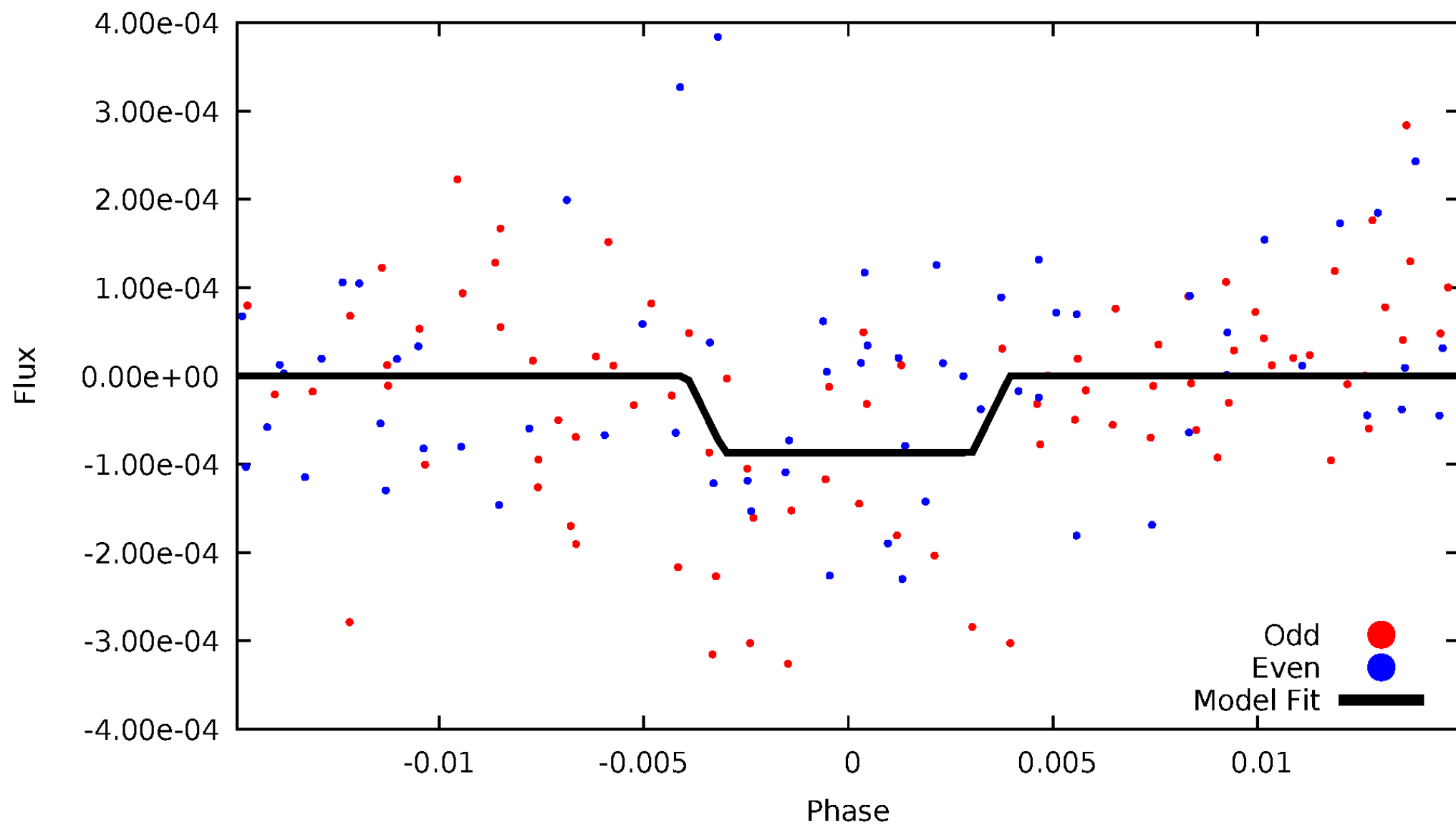
DV Odd/Even

TCE 007841640-08



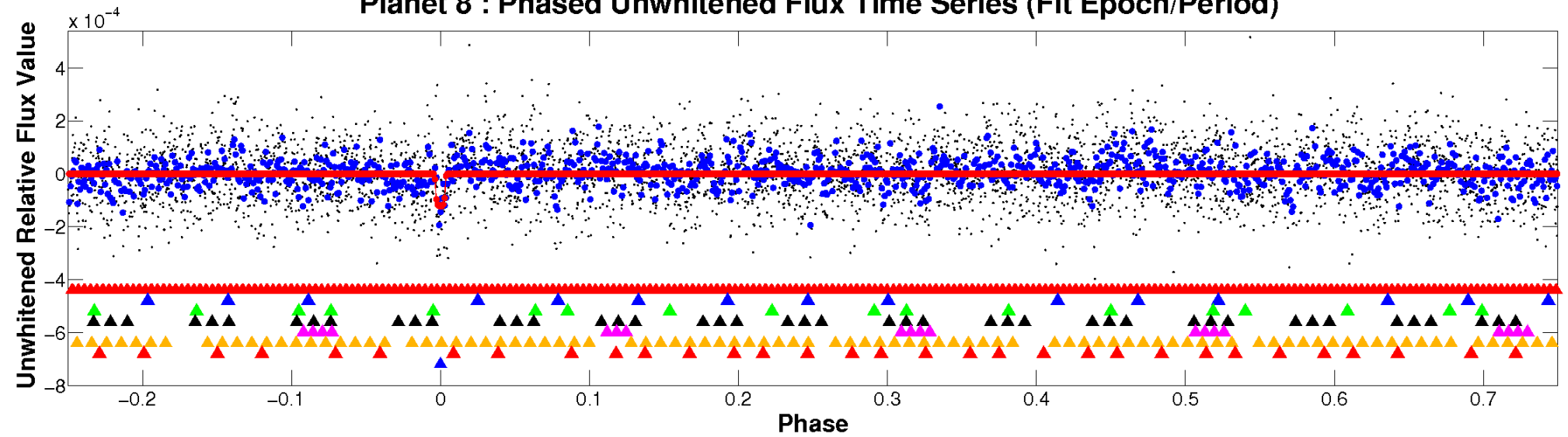
ALT Odd/Even

TCE 007841640-08

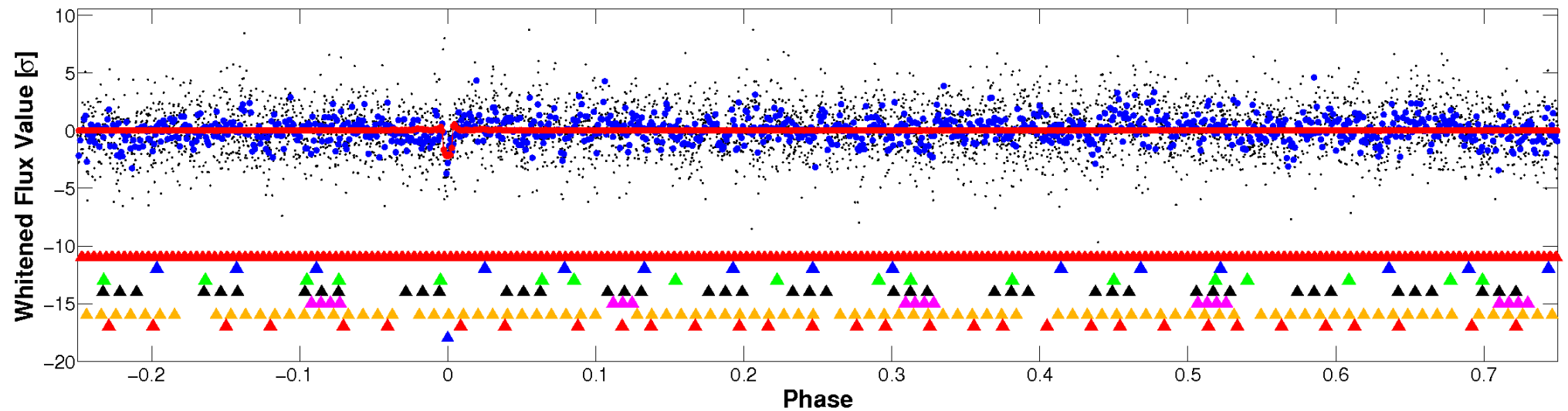


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

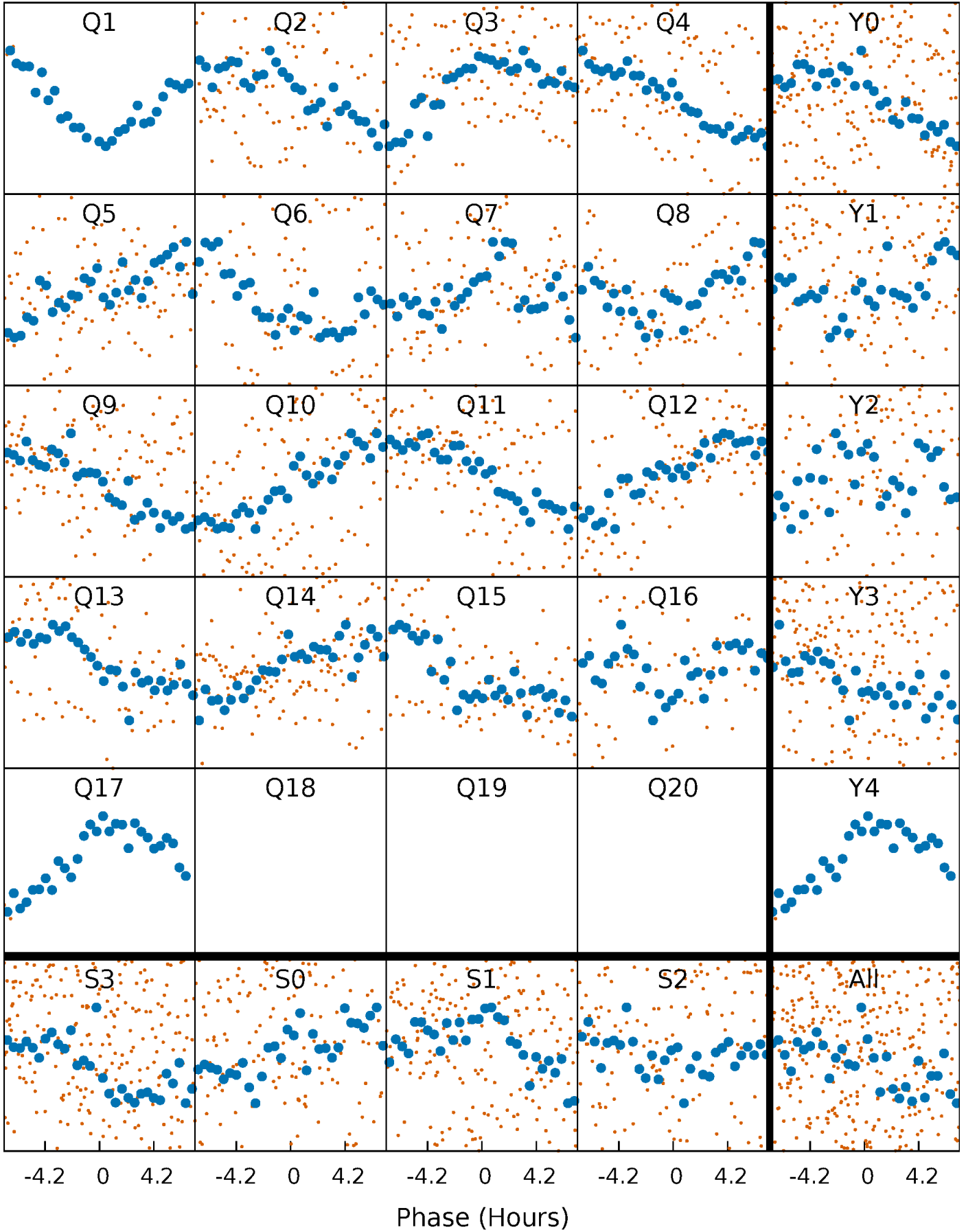


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



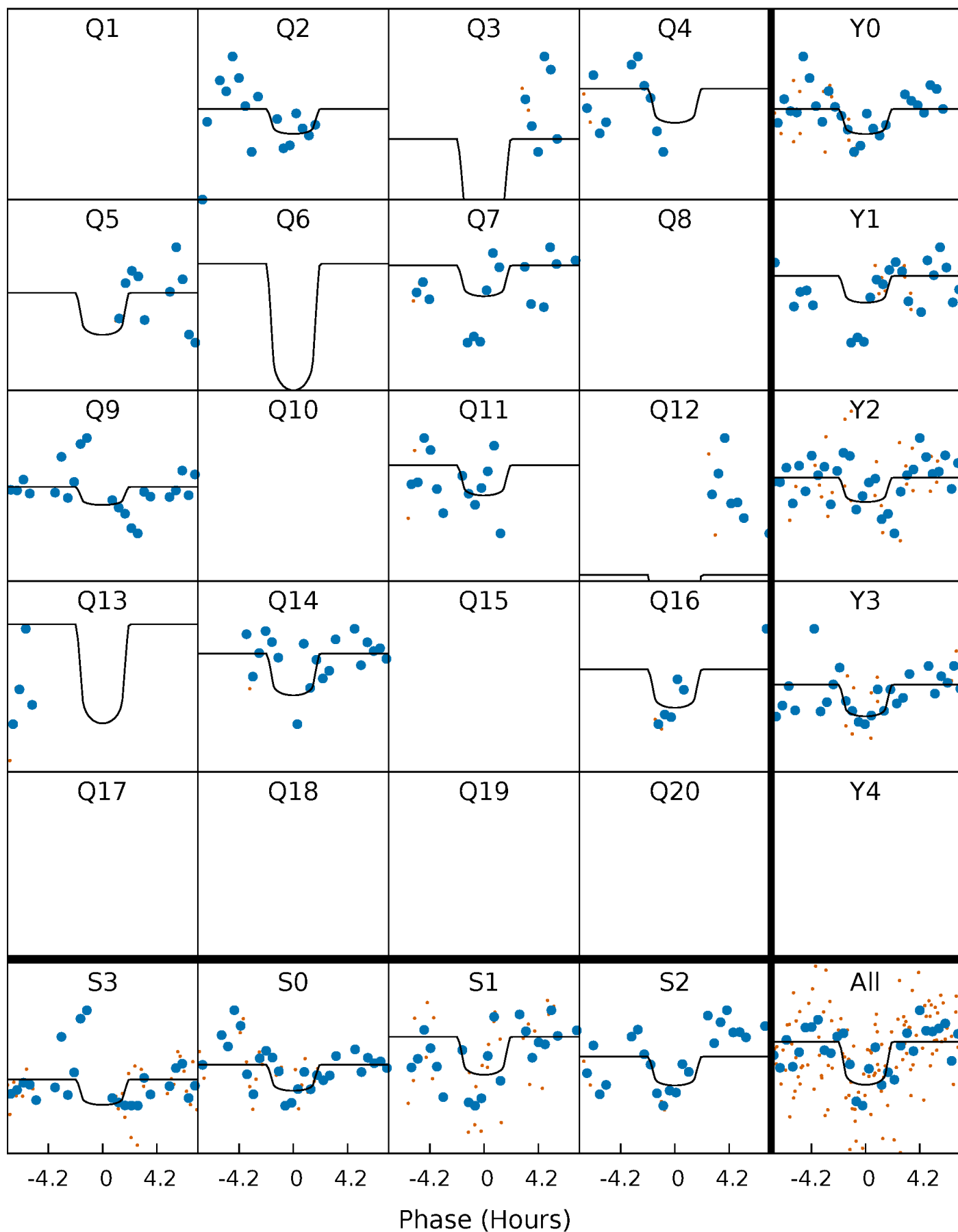
PDC Quarter-Phased Transit Curves

TCE 007841640-08 P= 22.135742 Days $T_0=152.672679$ (BKJD)



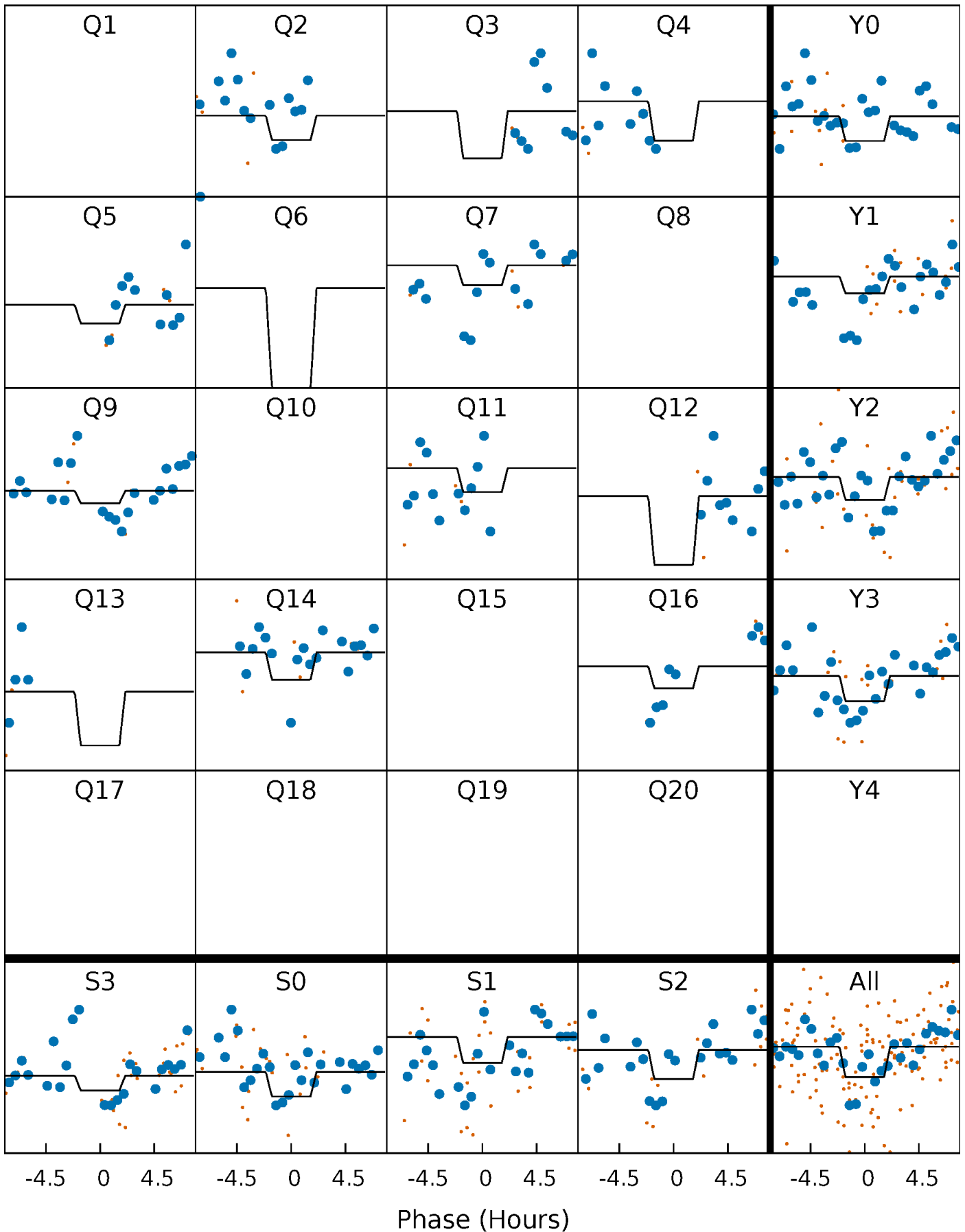
DV Quarter-Phased Transit Curves

TCE 007841640-08 P= 22.135742 Days $T_0=152.672679$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

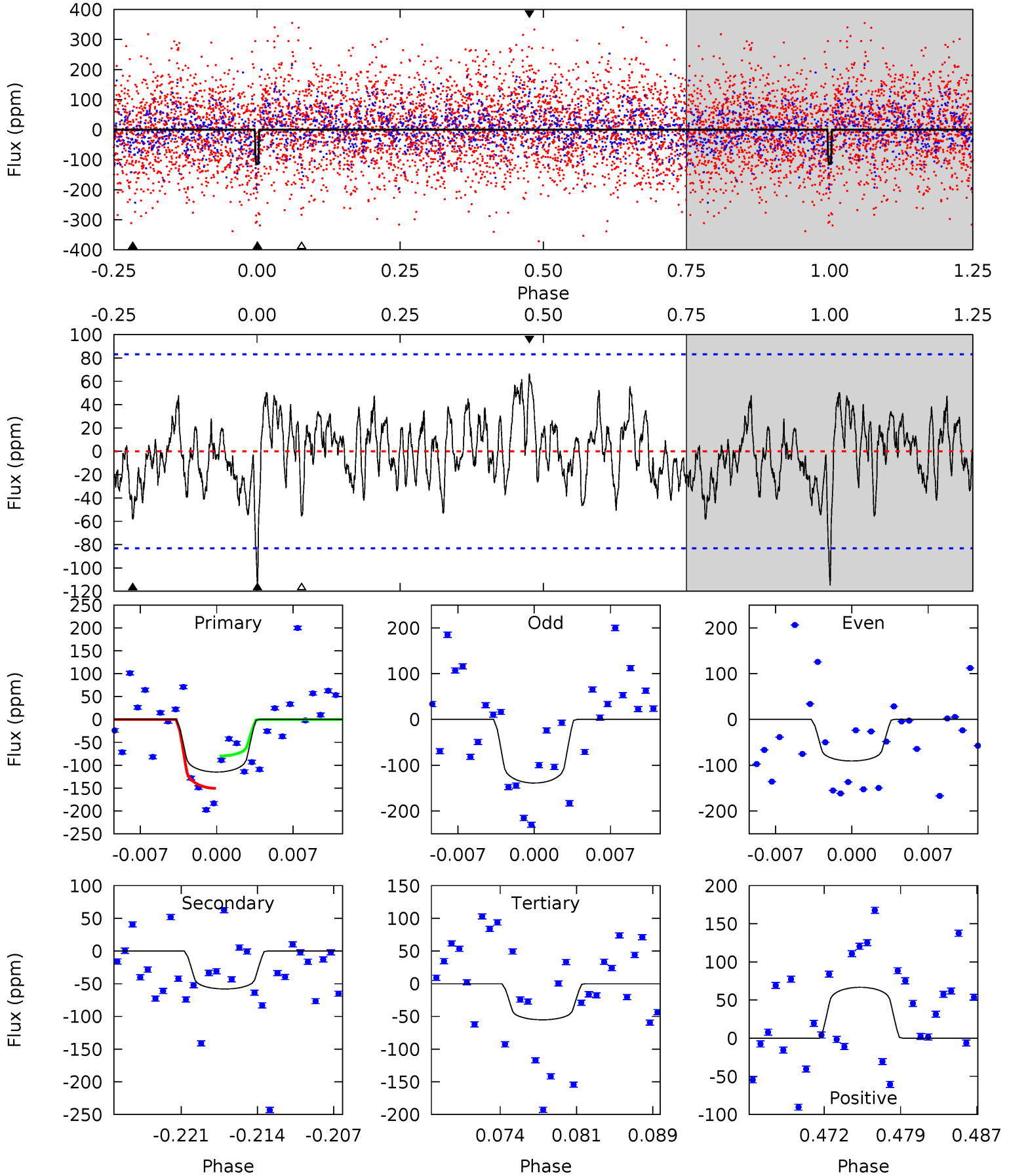
TCE 007841640-08 P= 22.135893 Days $T_0=152.692397$ (BKJD)



DV Model-Shift Uniqueness Test

007841640-08, P = 22.135742 Days, E = 130.536937 Days

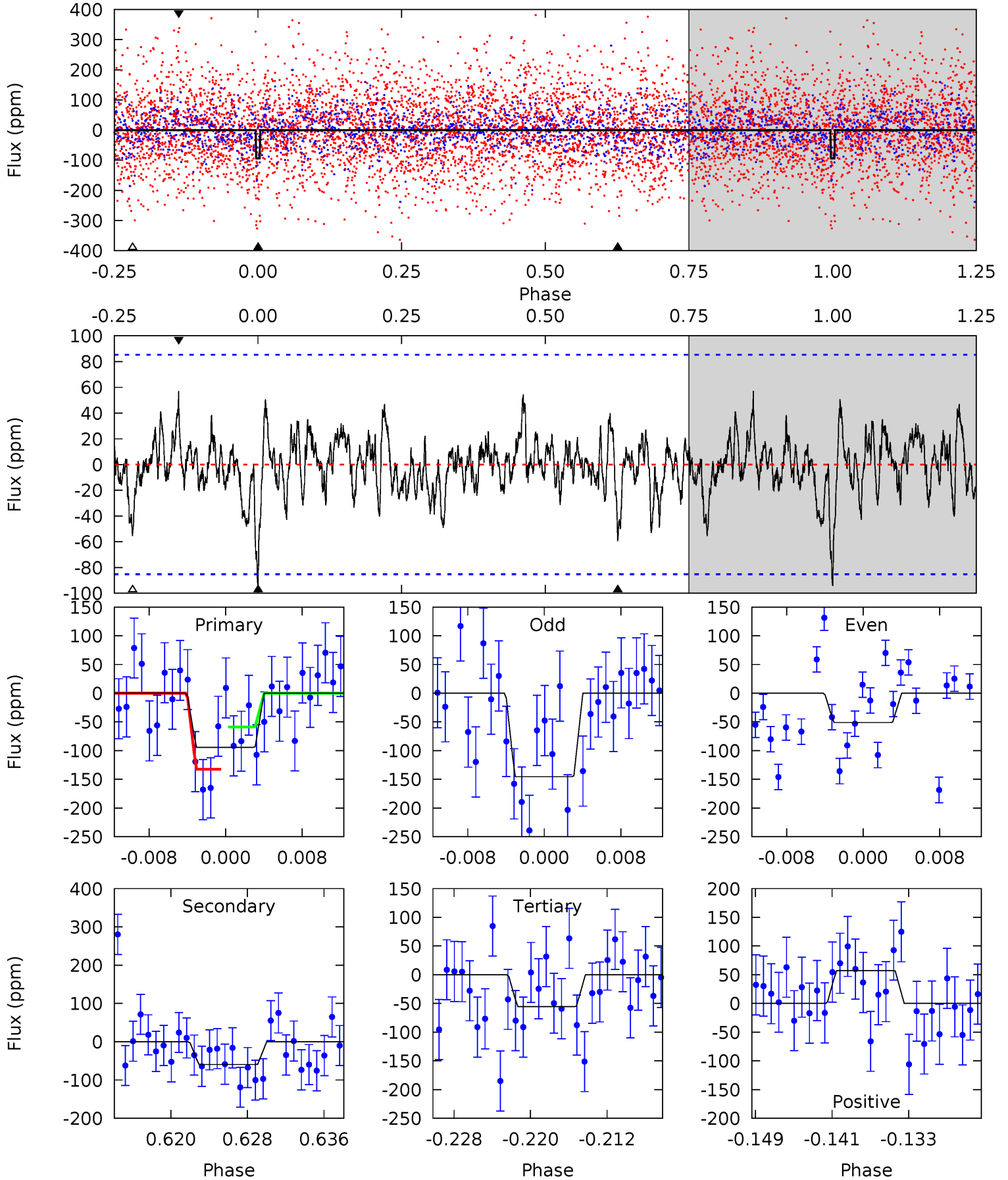
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.03	3.55	3.37	4.08	5.08	2.68	1.42	3.65	2.95	0.18	-0.53	1.50	0.59	0.37	2.15



Alt Model-Shift Uniqueness Test

007841640-08, P = 22.135893 Days, E = 130.556504 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.61	3.54	3.30	3.41	5.07	2.66	1.06	2.31	2.20	0.24	0.13	2.79	0.91	0.38	2.21



Stellar Parameters For KIC 007841640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6886^{+163}_{-245}	$3.789^{+0.292}_{-0.097}$	$-0.080^{+0.250}_{-0.300}$	$2.775^{+0.428}_{-0.998}$	$1.726^{+0.163}_{-0.353}$	$0.114^{+0.237}_{-0.036}$
	+2%/-4%	+8%/-3%	+312%/-375%	+15%/-36%	+9%/-20%	+208%/-32%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007841640-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-58 ± 16	$3.46^{+2.23}_{-1.91}$	1610^{+100}_{-145}	5411^{+2772}_{-1066}	92^{+346}_{-62}
Alt.	-59 ± 17	$2.92^{+2.18}_{-1.64}$	1613^{+96}_{-138}	5898^{+3816}_{-1325}	130^{+601}_{-90}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

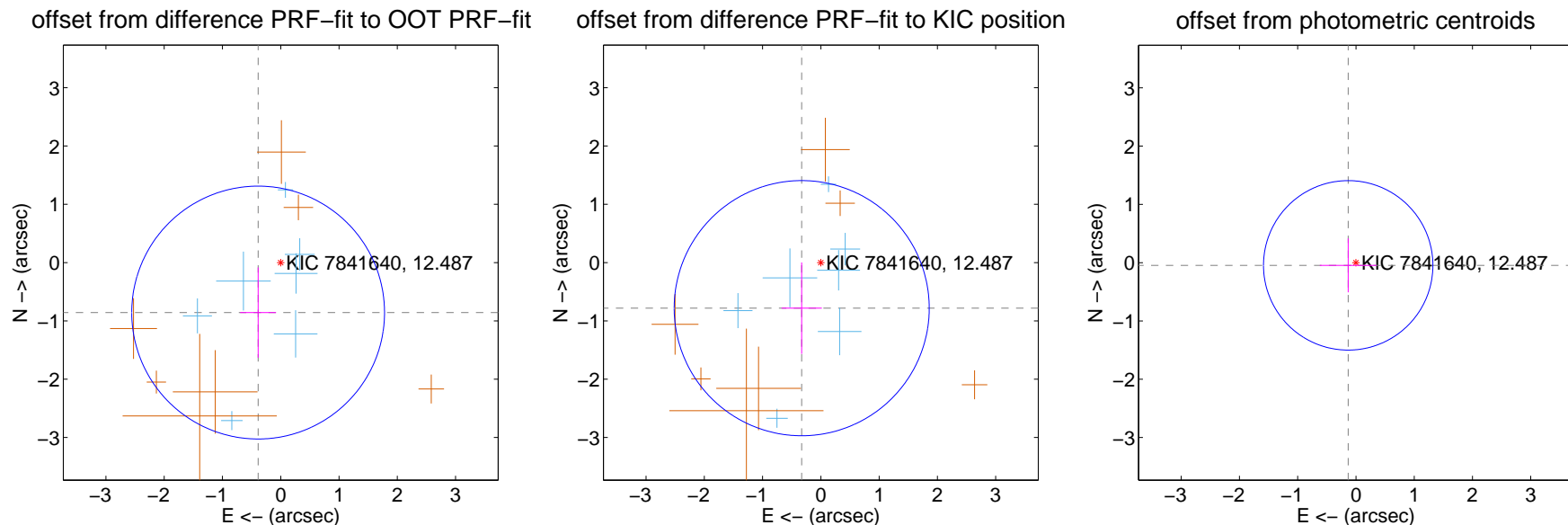
DV Centroid Data

Supplemental centroid analysis for 007841640-08. Kepler magnitude: 12.49. Transit SNR 12.11

There are 7 quarters with good PRF difference image offsets

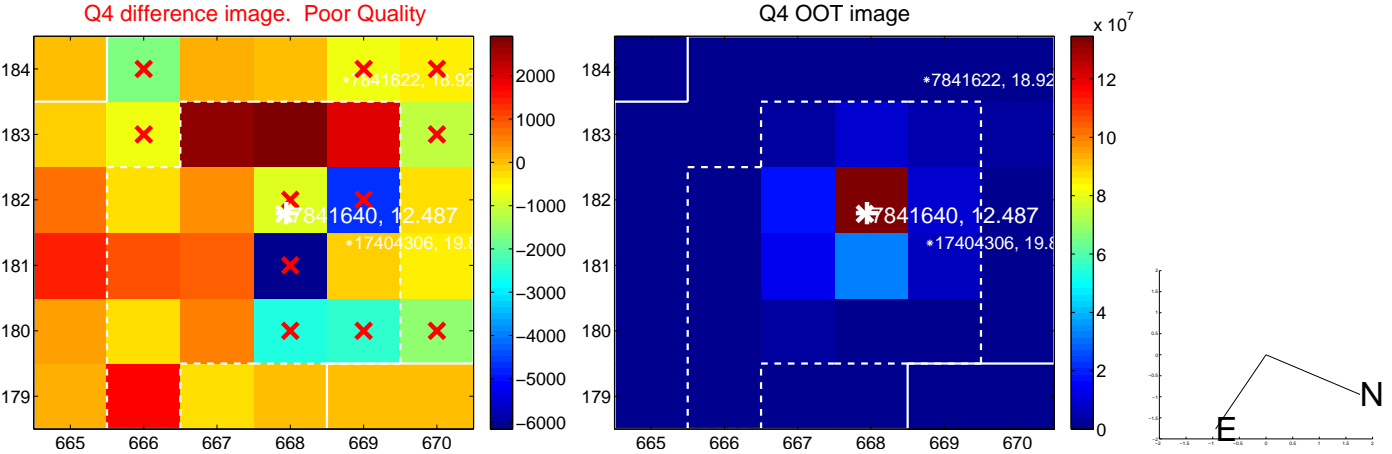
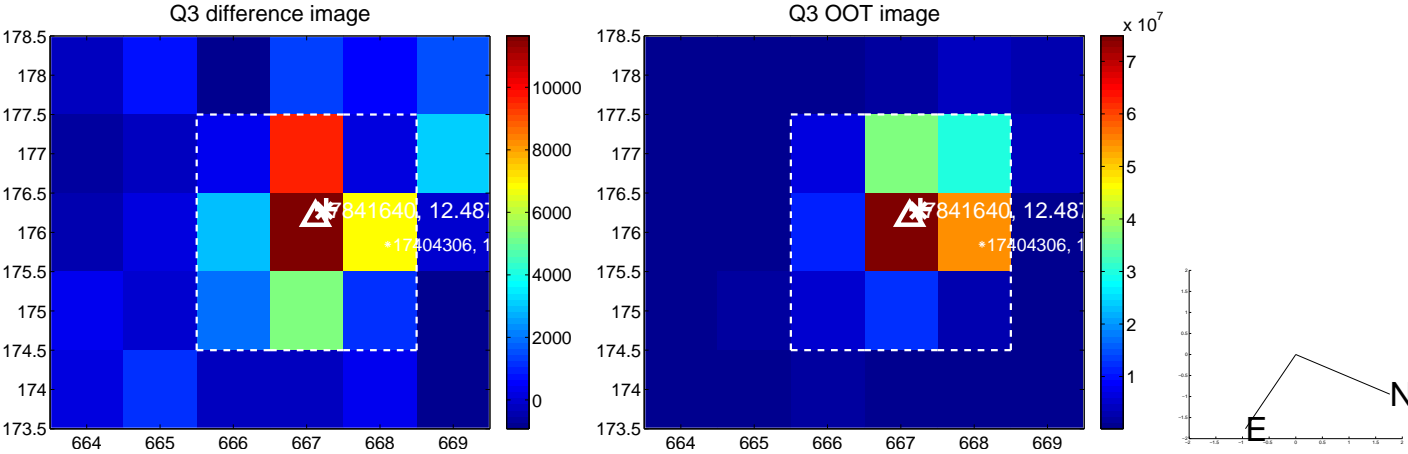
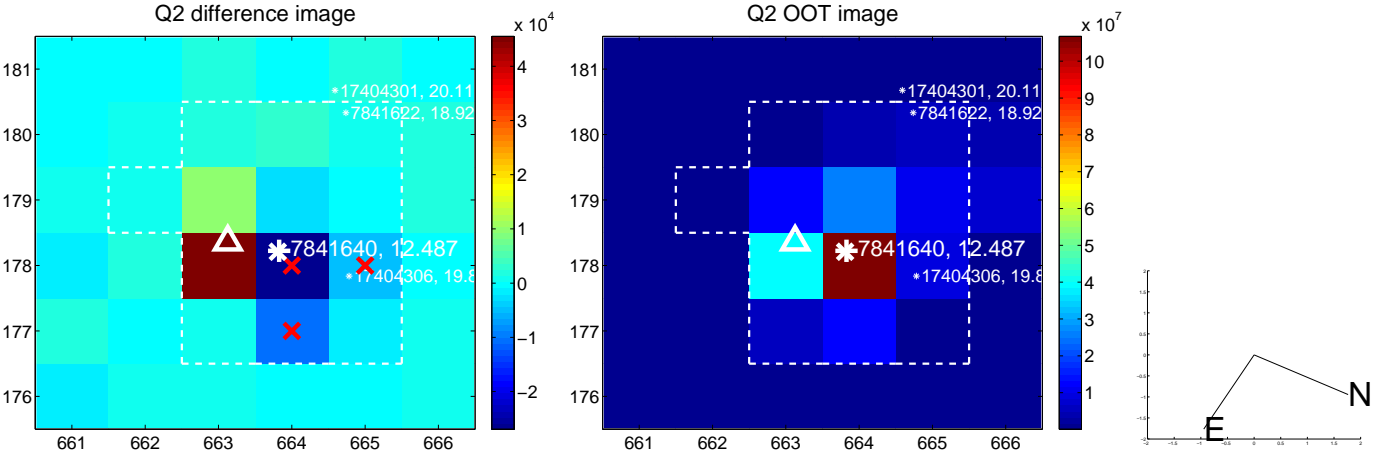
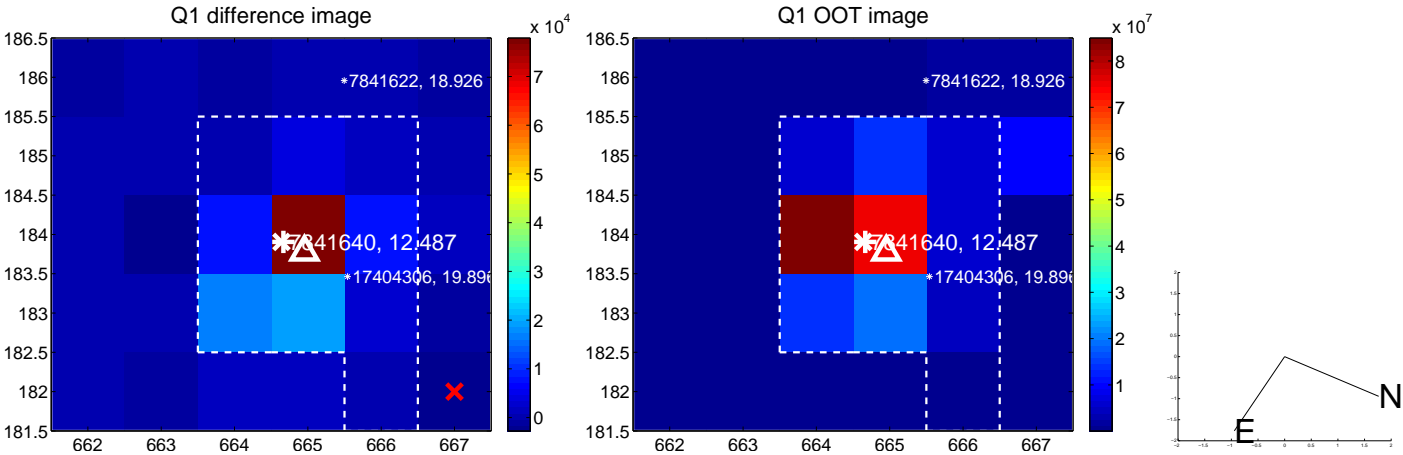
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.941 ± 0.723	1.30	0.388 ± 0.308	-0.857 ± 0.774
PRF-fit source offset from KIC position	0.848 ± 0.729	1.16	0.329 ± 0.345	-0.782 ± 0.785
photometric centroid source offset	0.14 ± 0.48	0.29	0.13 ± 0.49	-0.05 ± 0.46

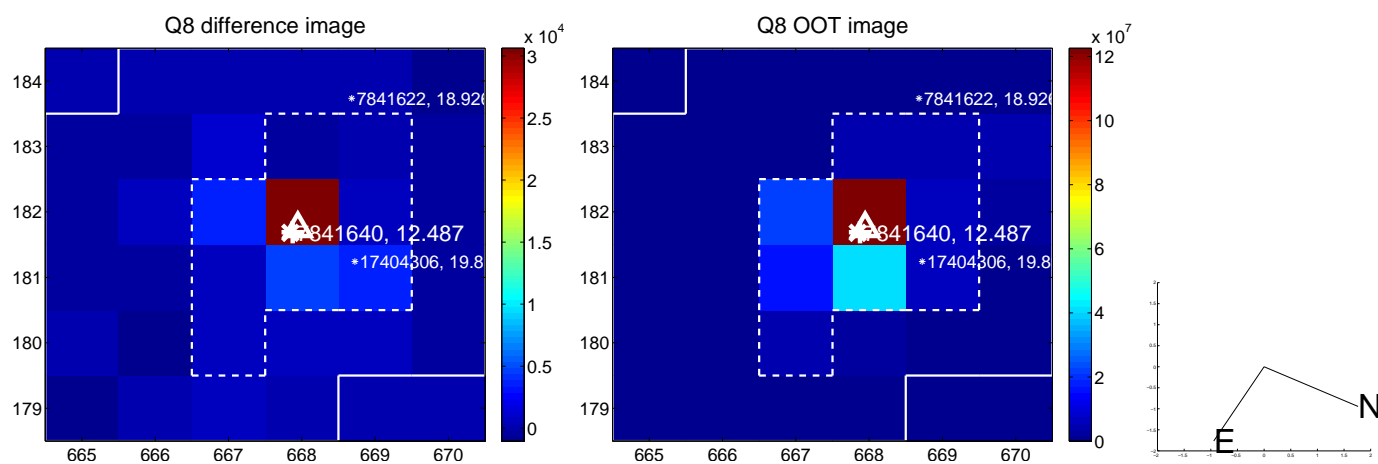
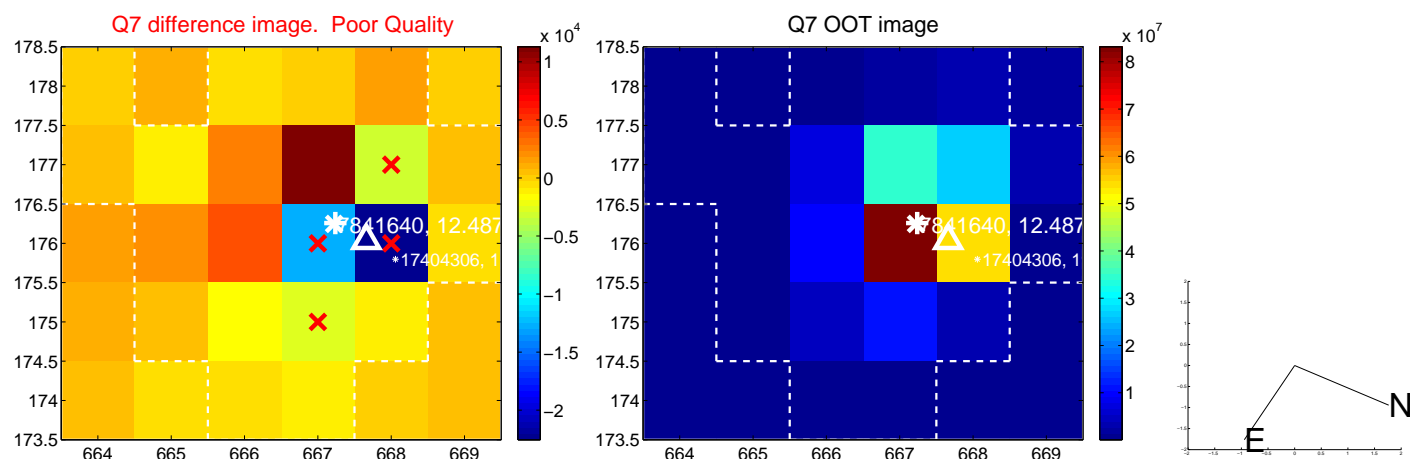
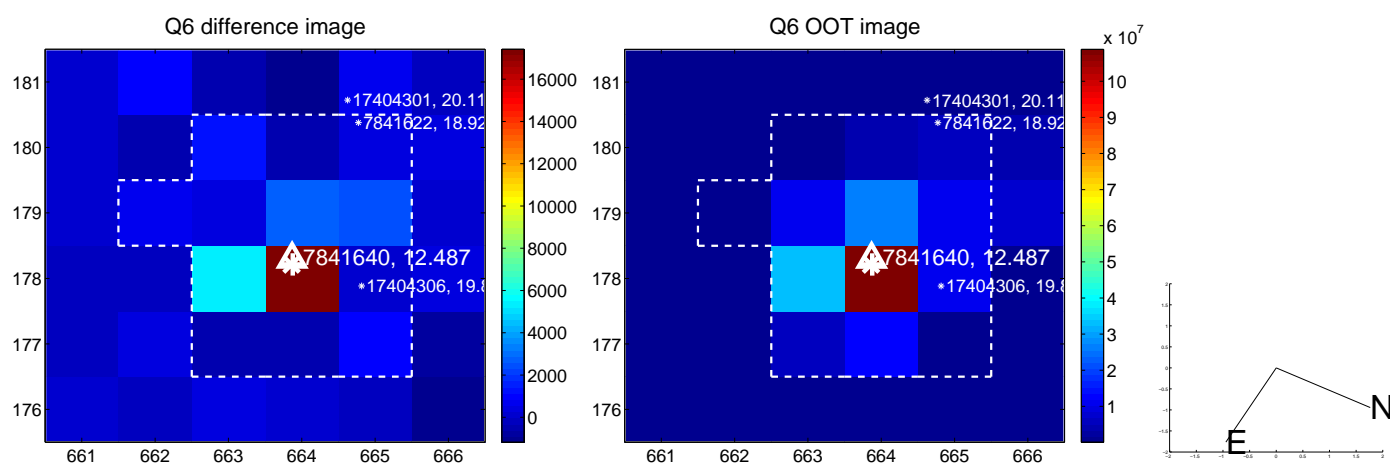
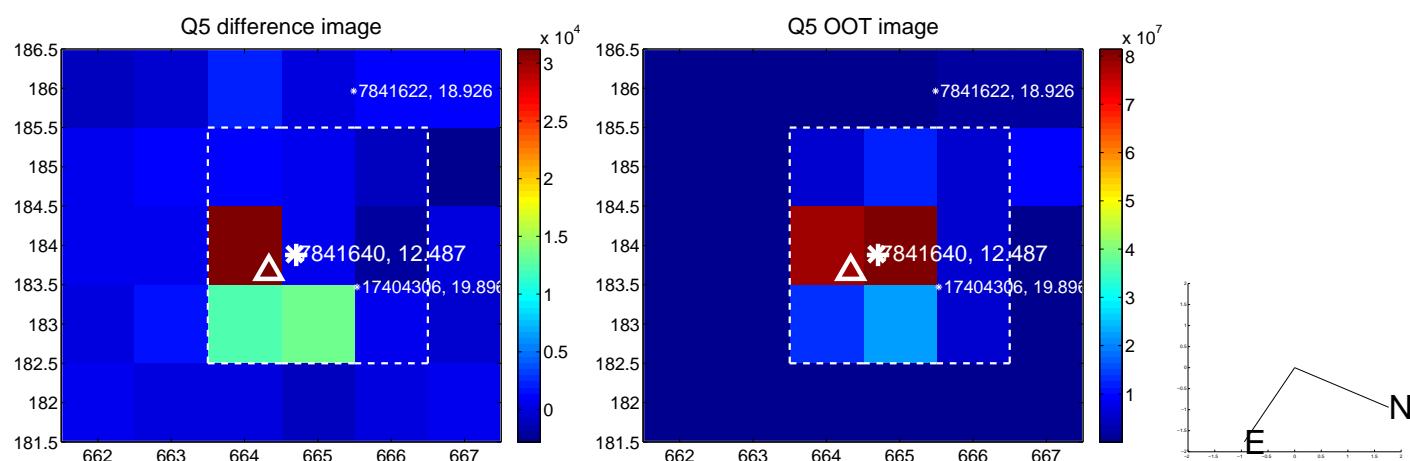


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

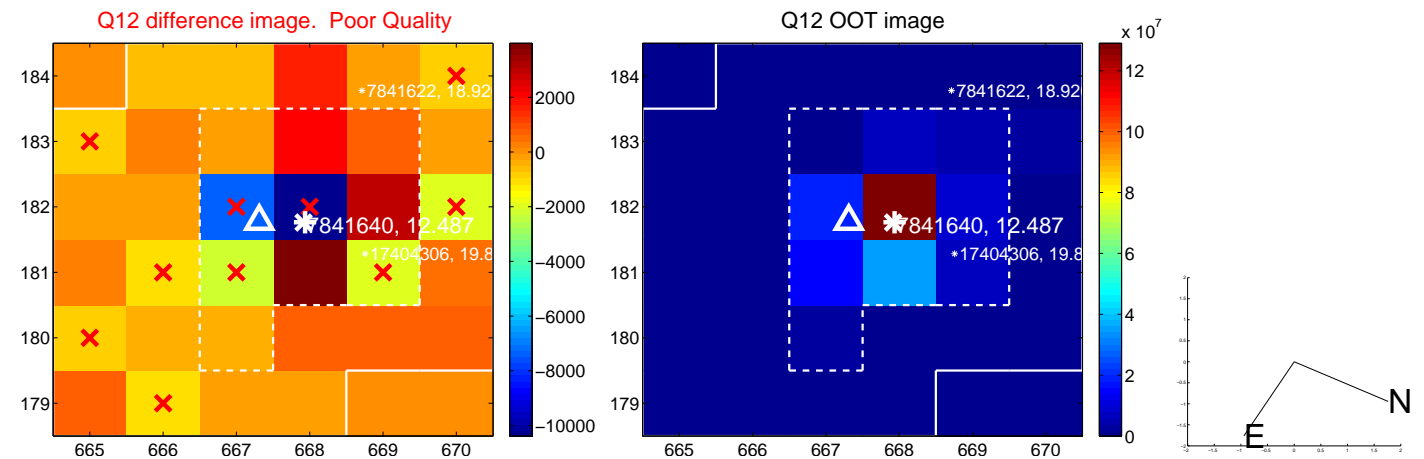
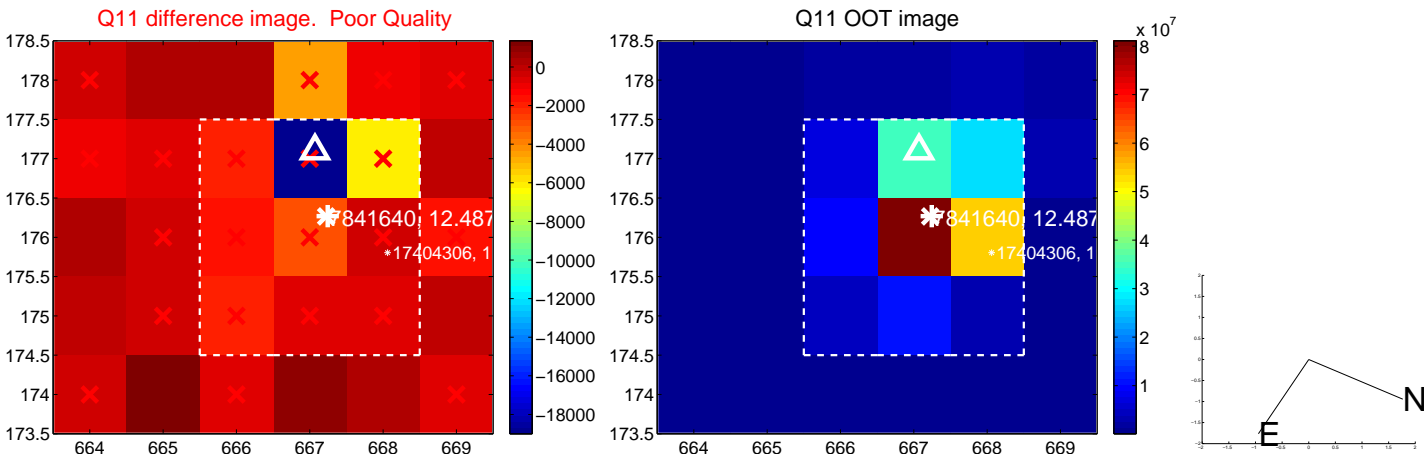
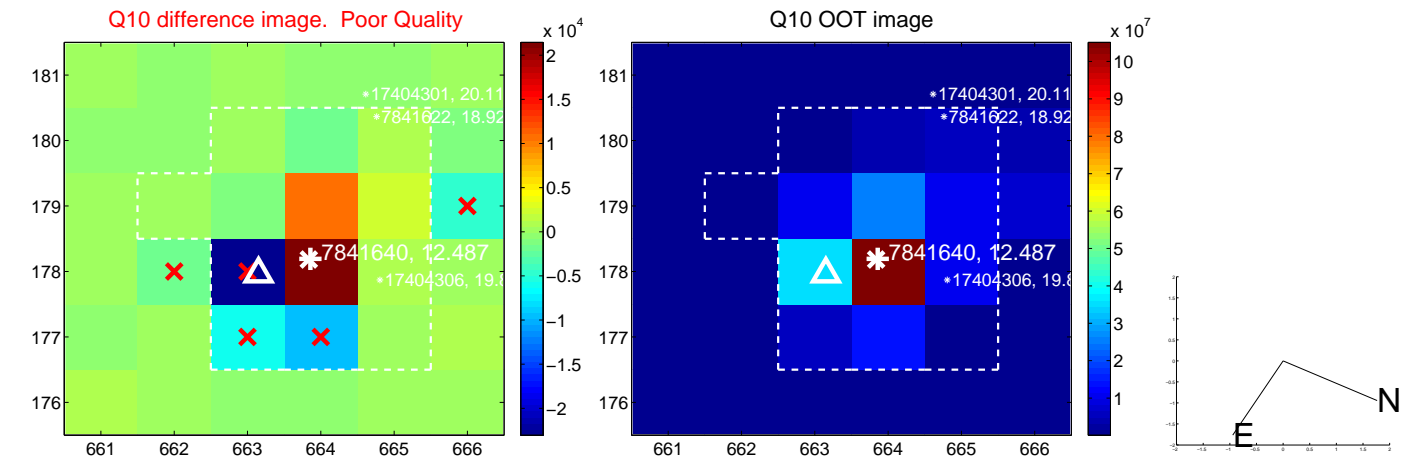
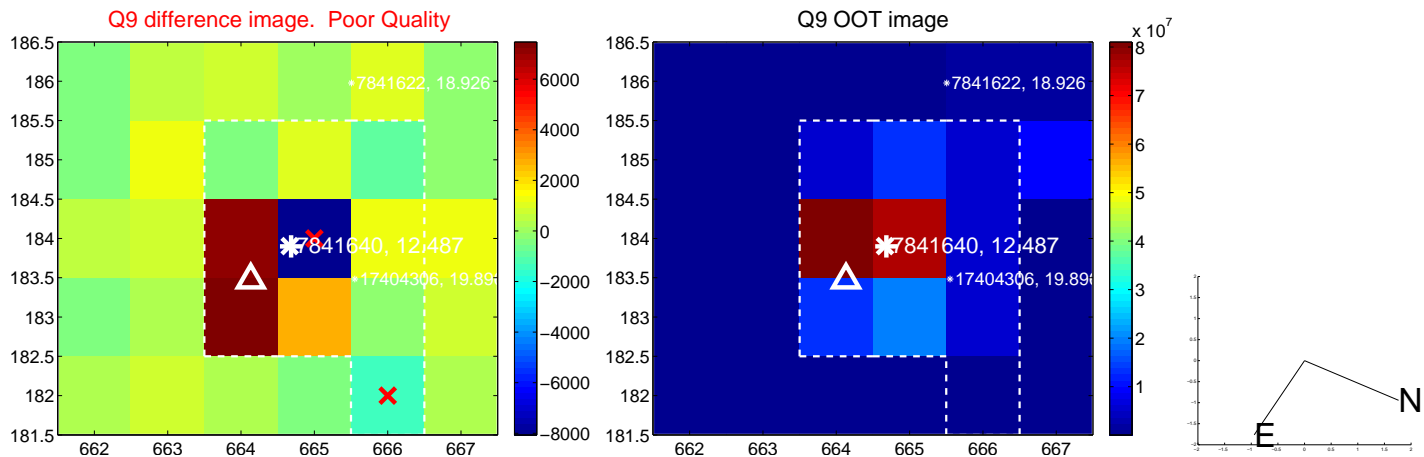
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



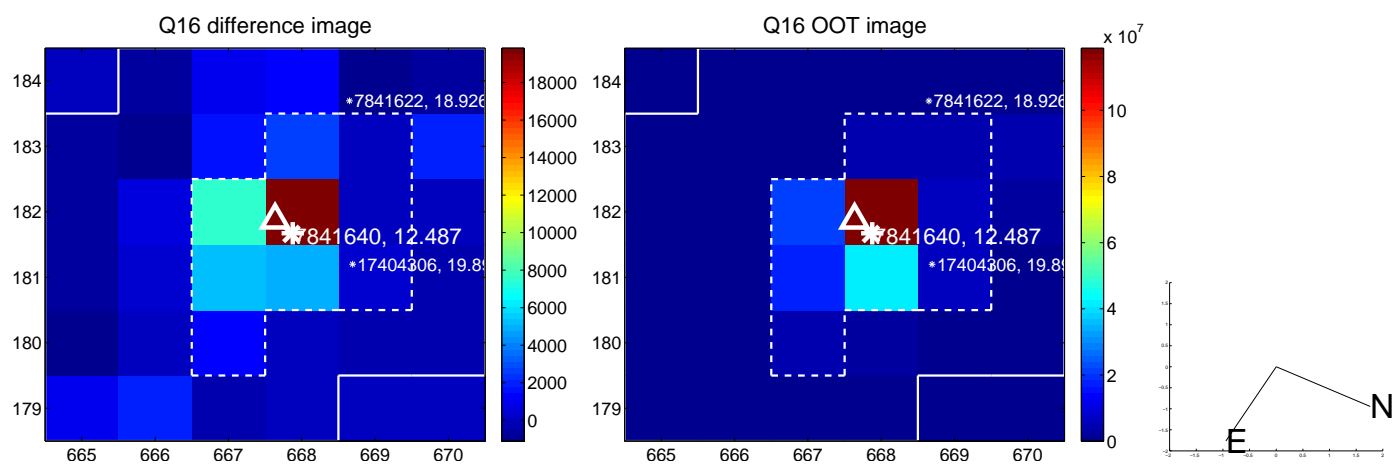
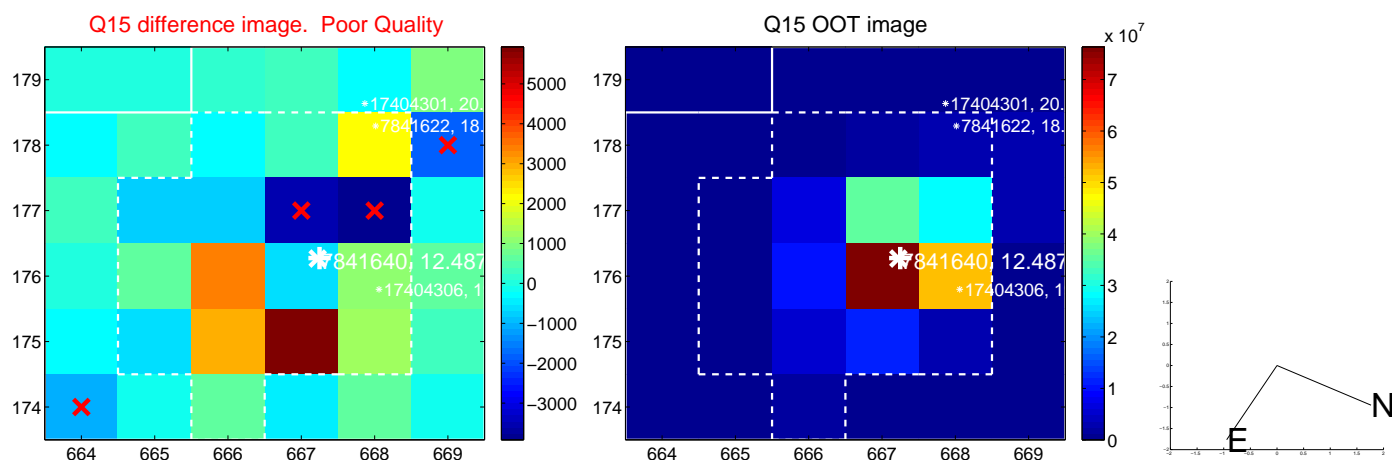
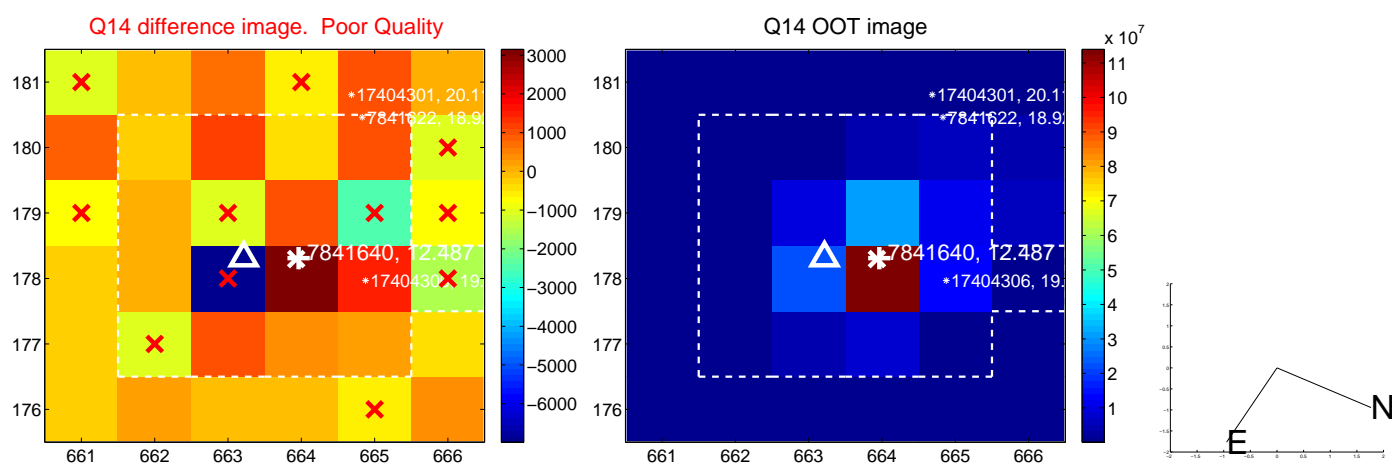
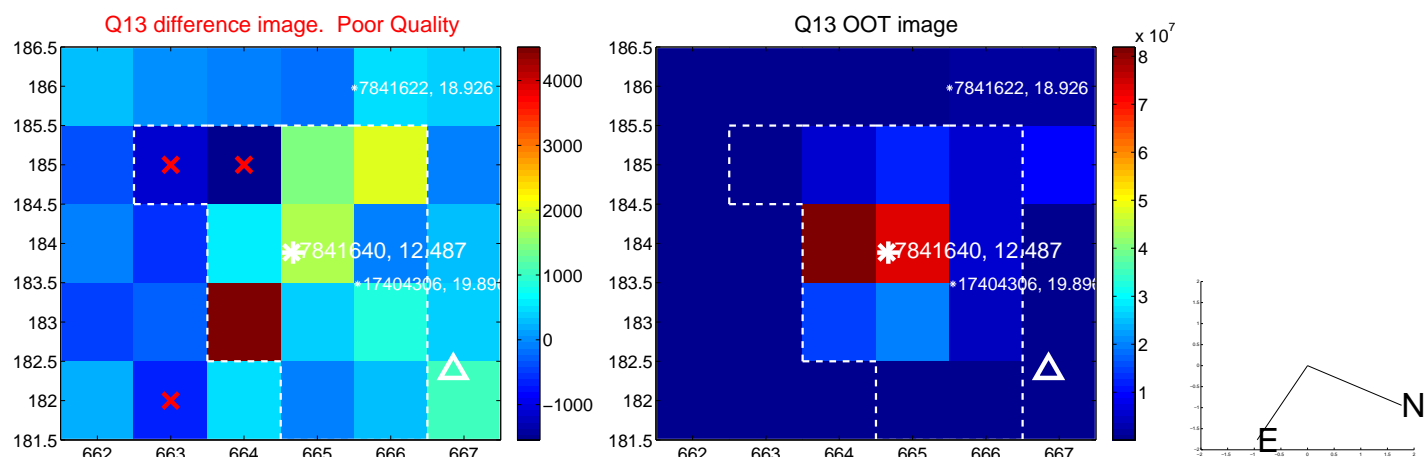
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



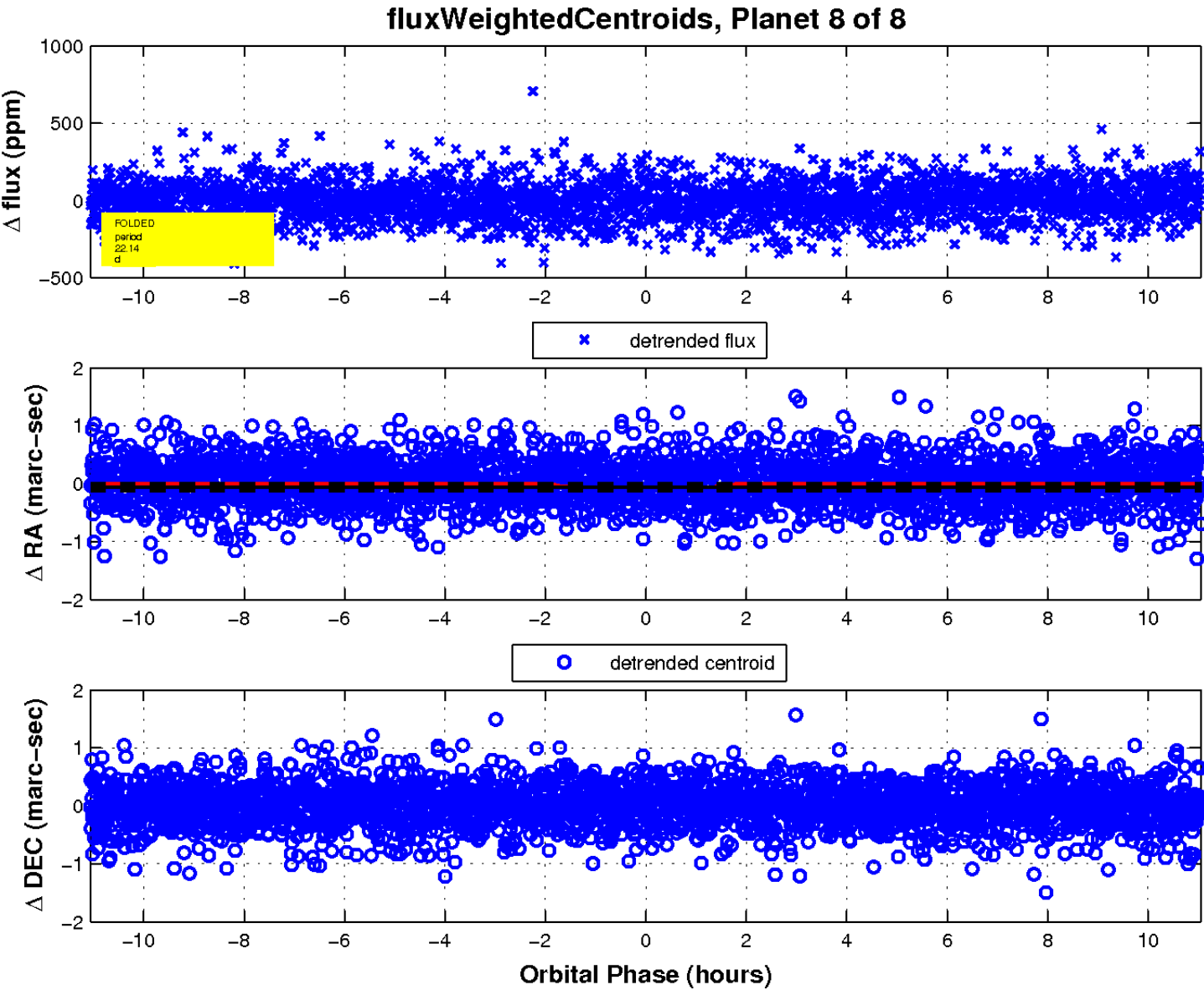
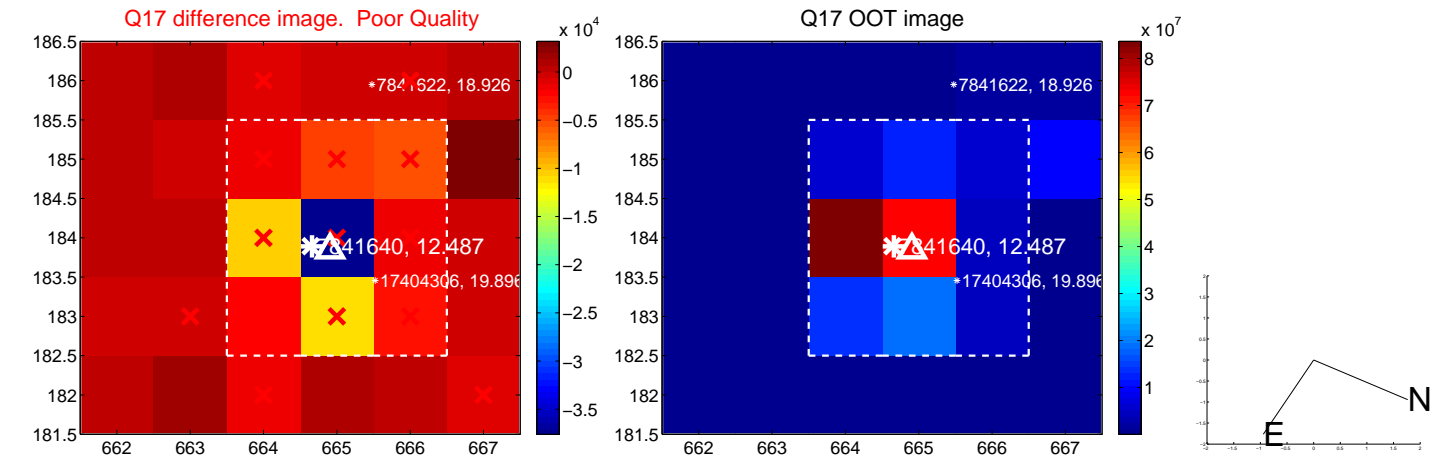
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

