

KIC 011954651

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})
011954651-01	OBS	No	0.700292	132.024552	141.9	3.982	10.3	11.8	1.73	6810	2.39	21675.65
011954651-02	OBS	No	7.200909	133.761875	989.6	8.358	12.9	15.0	1.73	6810	10.09	969.38
011954651-03	OBS	No	7.200587	136.289486	835.7	7.495	11.9	12.9	1.73	6810	6.35	969.44
011954651-04	OBS	No	28.803844	132.031813	1159.9	3.834	8.6	8.2	1.73	6810	9.99	152.67
011954651-05	OBS	No	16.779839	137.982768	703.6	5.791	7.9	8.2	1.73	6810	4.92	313.78
011954651-06	OBS	No	50.409778	173.913015	913.5	3.079	7.7	7.8	1.73	6810	5.88	72.39
011954651-07	OBS	No	41.948088	150.285561	1818.2	2.615	8.2	8.1	1.73	6810	8.28	92.48
011954651-08	OBS	No	51.694463	159.140573	59.9	6.000	7.8	-1.0	1.73	6810	1.35	70.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

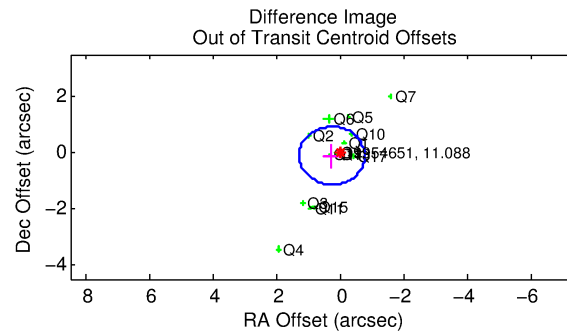
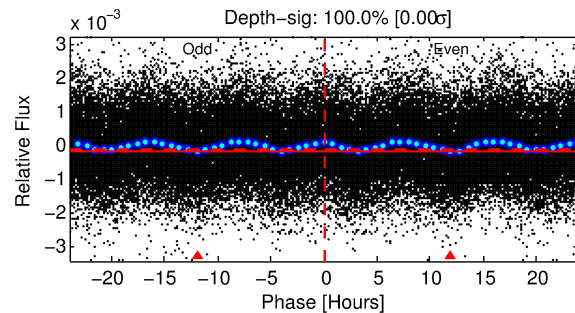
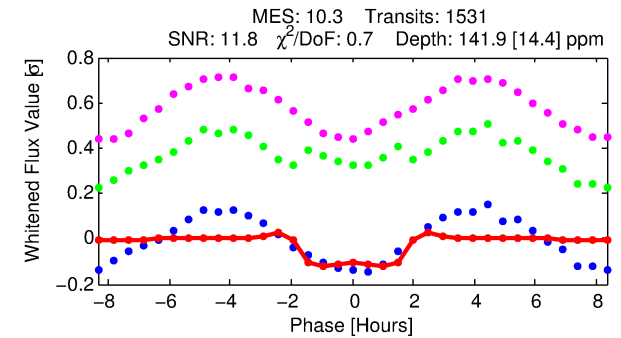
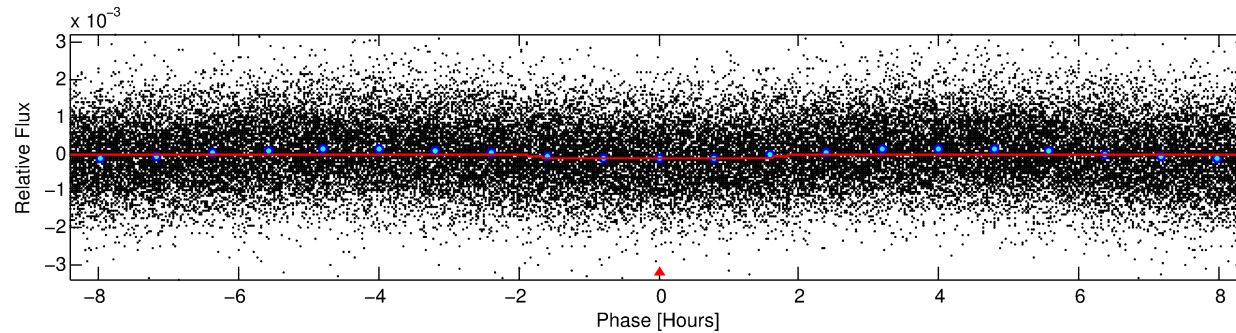
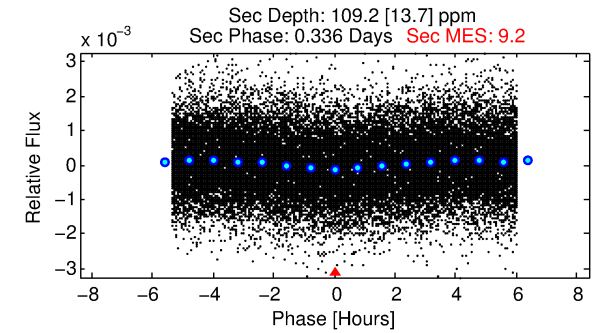
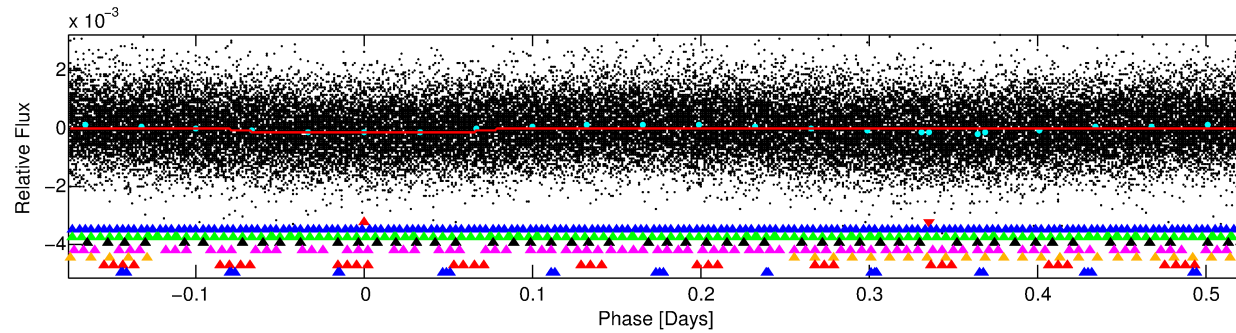
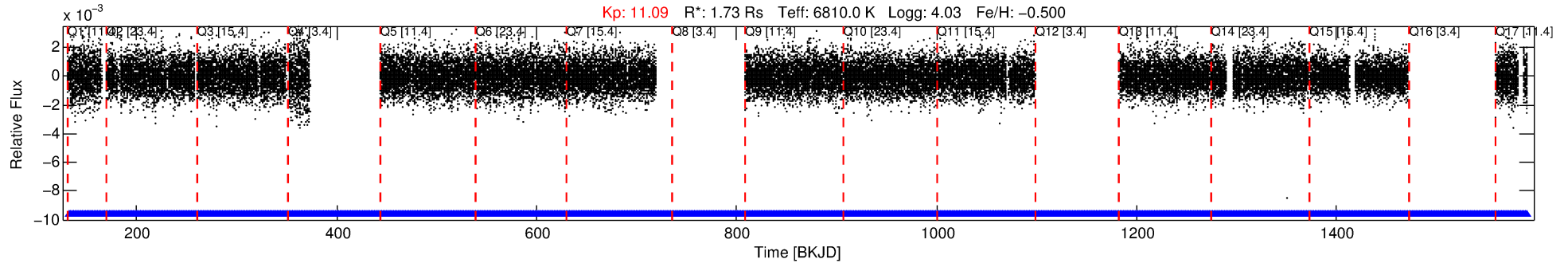
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-01

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 1 of 8 Period: 0.700 d



DV Fit Results:

Period = 0.70029 [0.00001] d
Epoch = 132.0246 [0.0027] BKJD
Rp/R* = 0.0127 [0.0029]
a/R* = 1.13 [0.32]
b = 0.90 [0.28]
Seff = 21675.65 [11628.02]
Teq = 3094 [415] K
Rp = 2.39 [0.96] Re
a = 0.0163 [0.0052] AU
Ag = 2.78 [1.92] [0.93σ]
Teffp = 6177 [765] K [3.54σ]

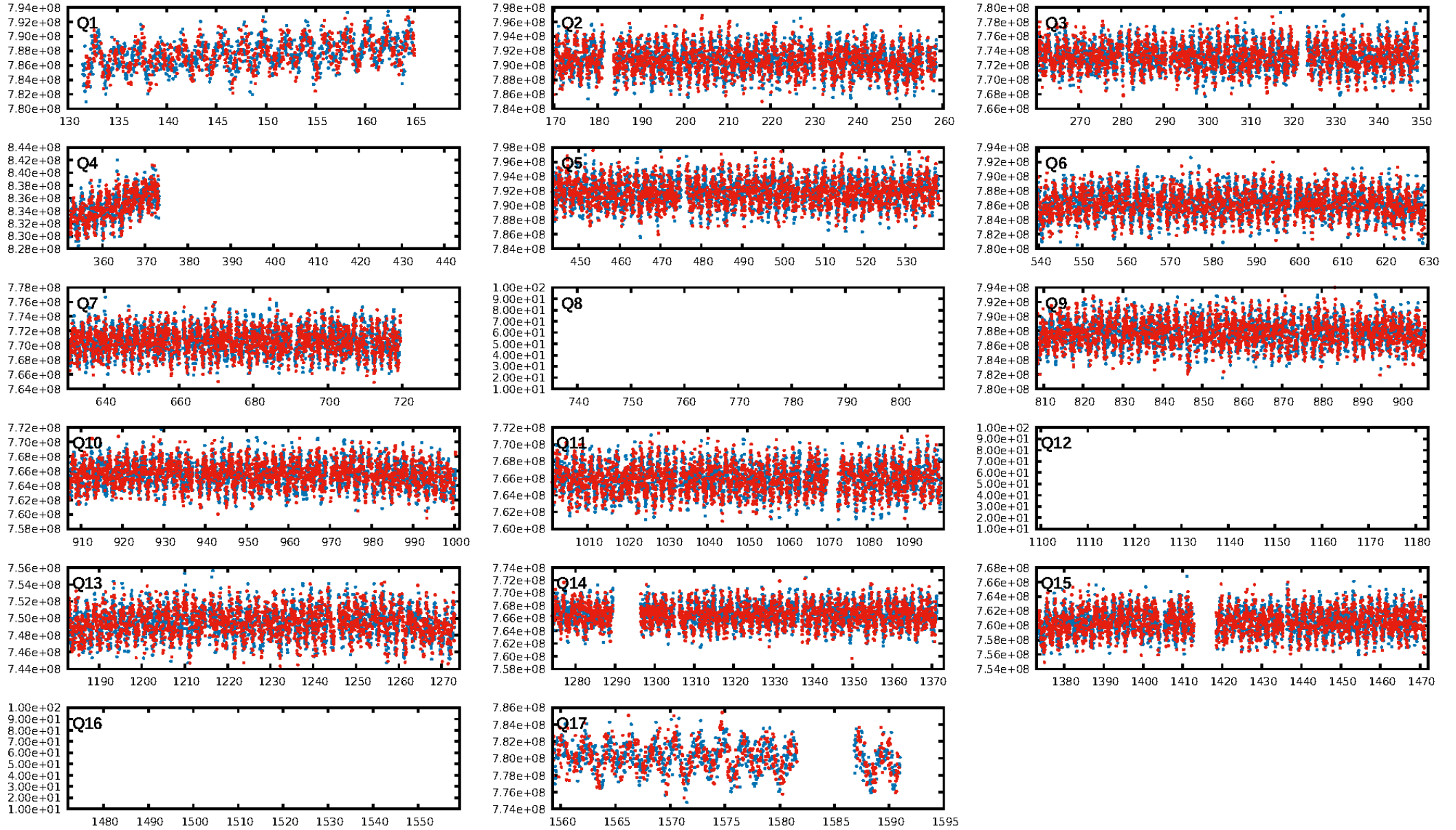
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [18.38σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1414/1414]
GhostDiagnostic-chr: 1.584
Centroid-sig: 0.0%
Centroid-so: 0.316 arcsec [4.18σ]
OotOffset-rm: 0.295 arcsec [0.86σ]
KicOffset-rm: 0.322 arcsec [0.86σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 1.00 [14/14]

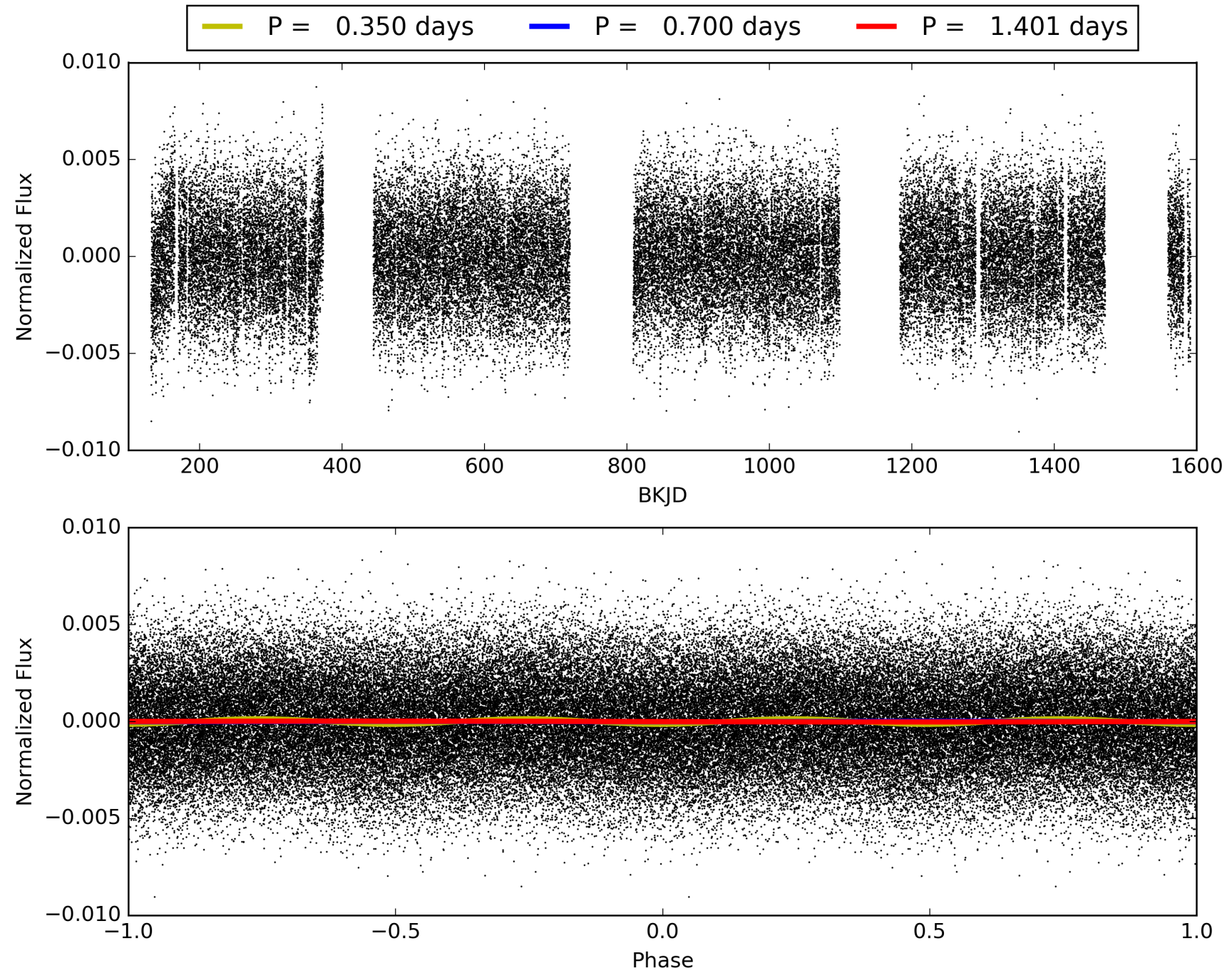
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:18:02 Z

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

TCE 011954651-01, PDC Light Curves

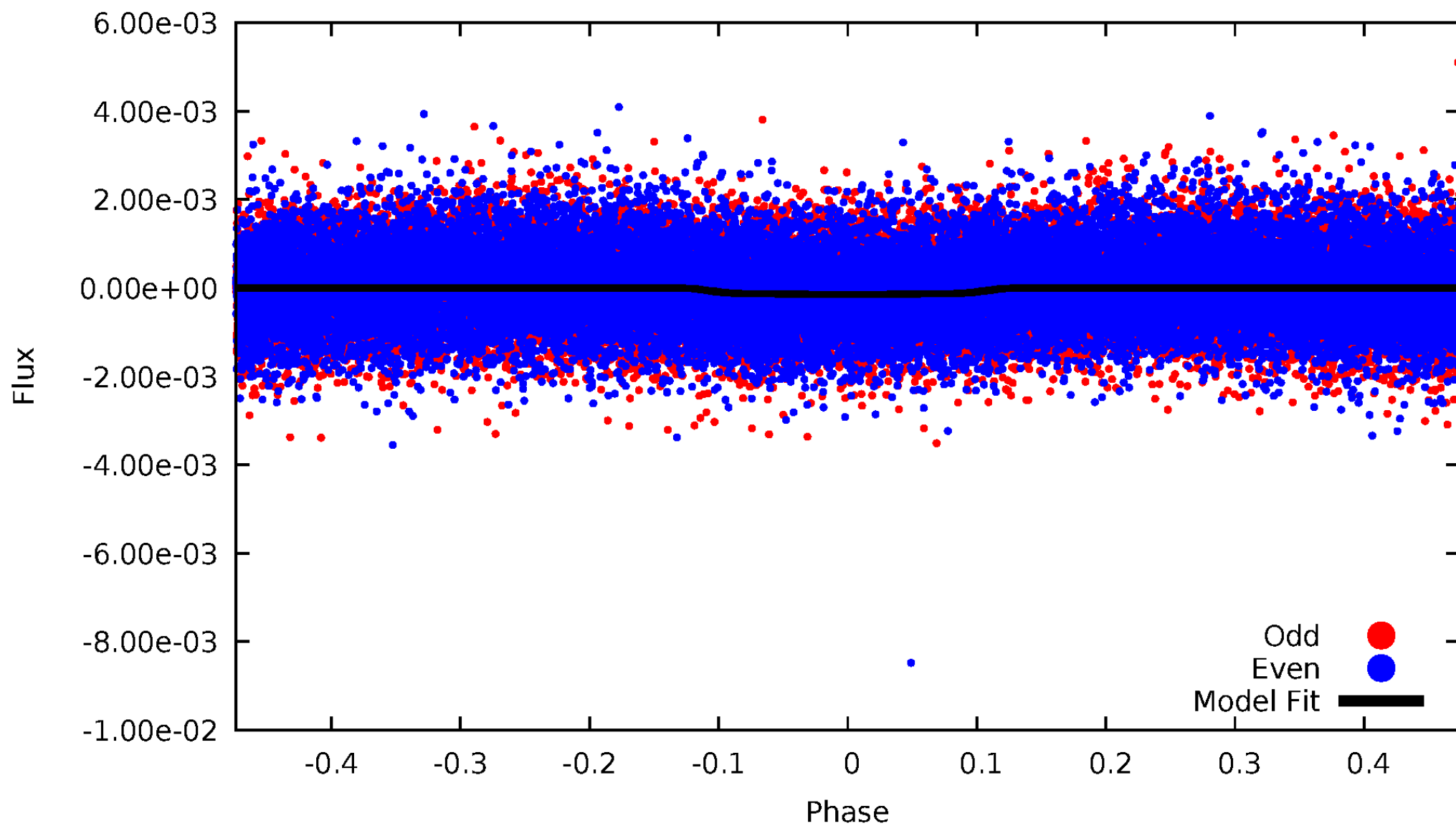


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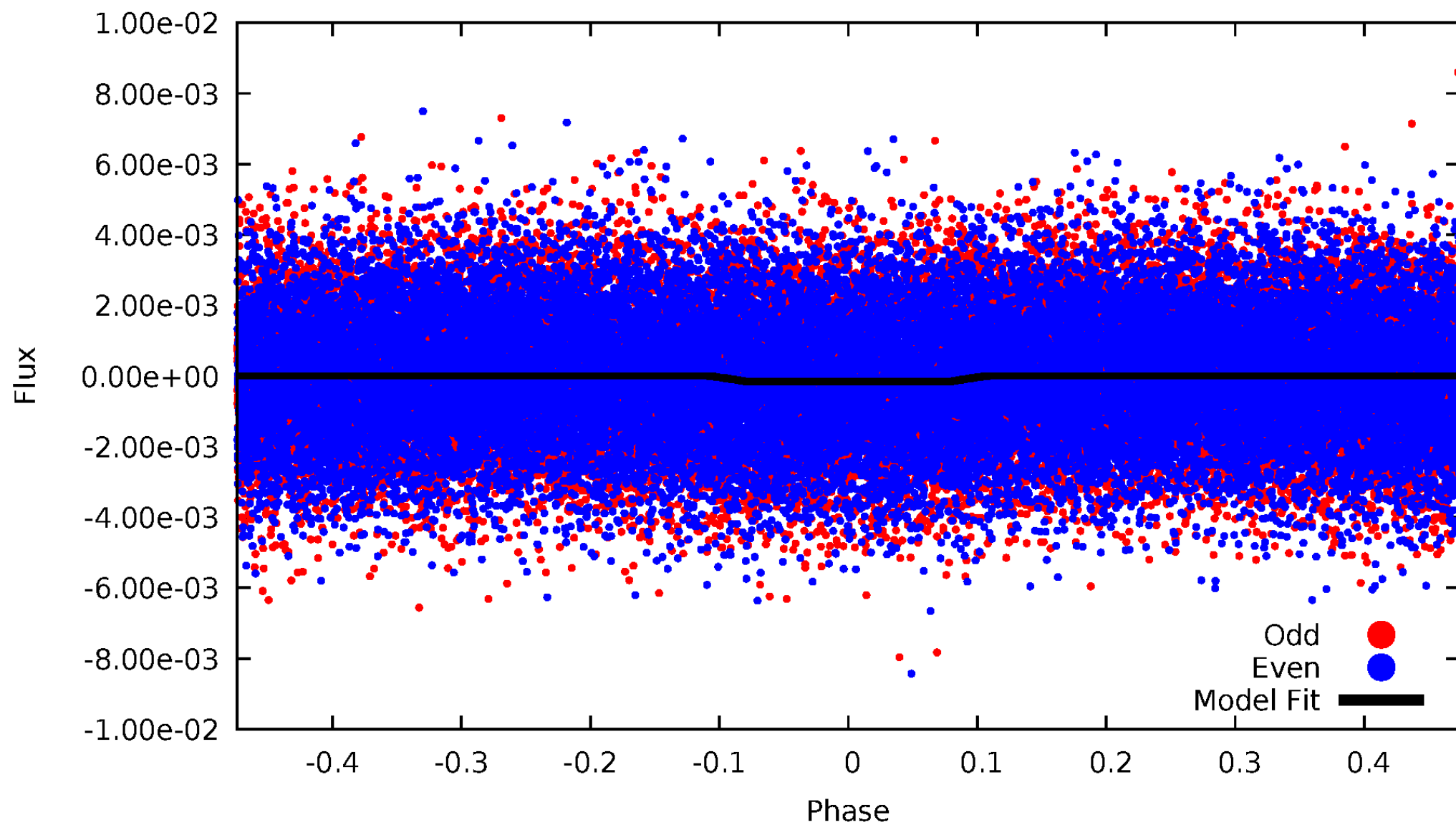
DV Odd/Even

TCE 011954651-01

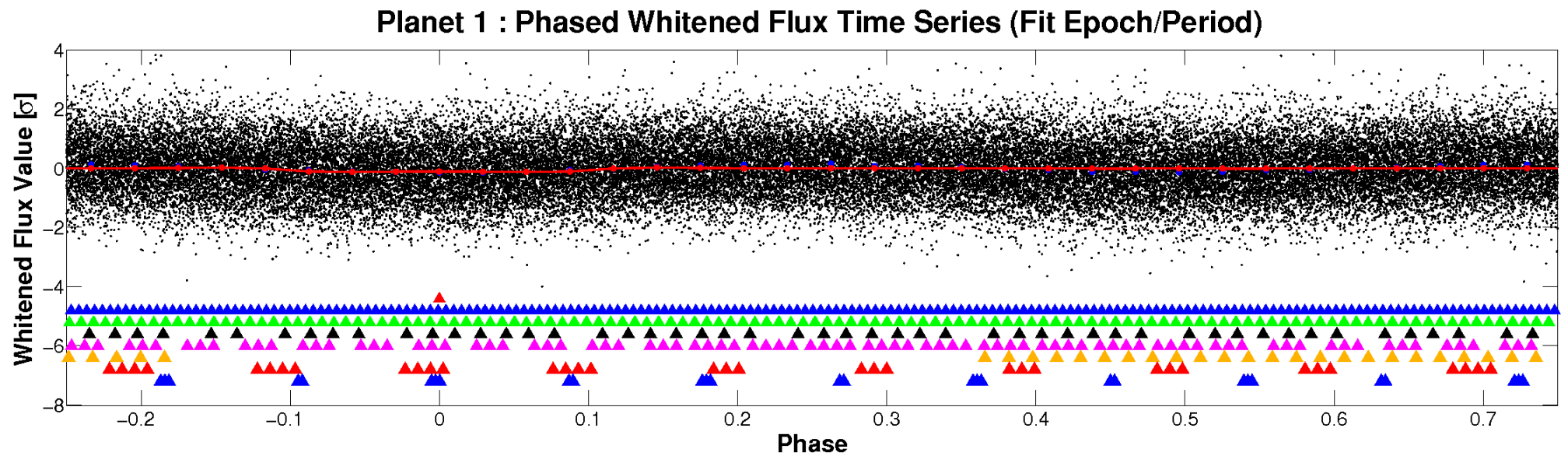
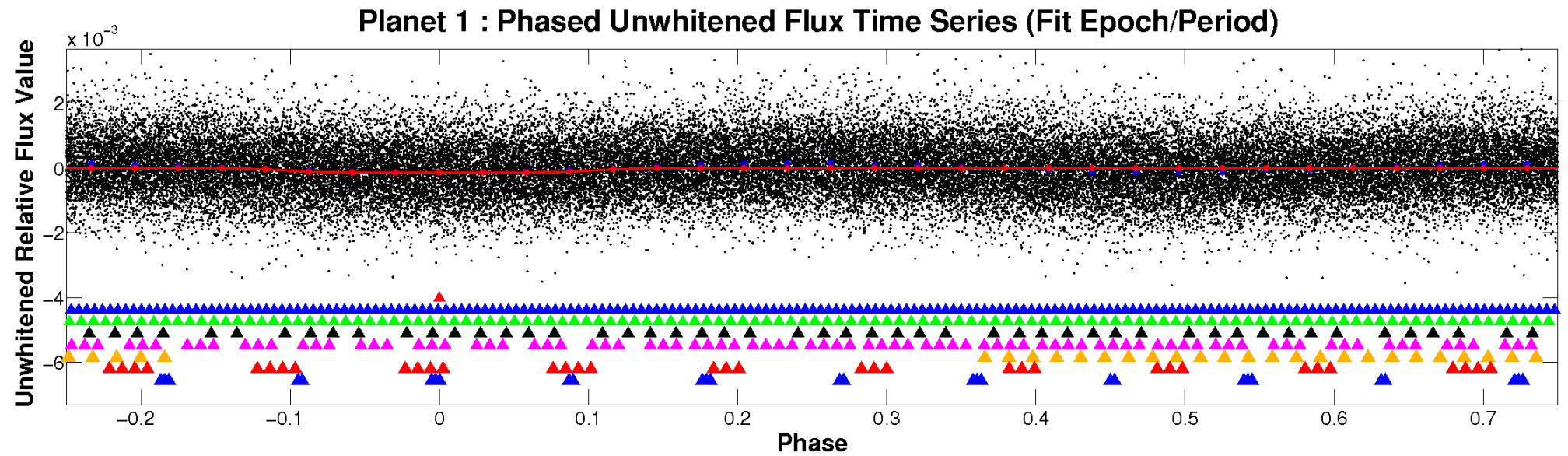


ALT Odd/Even

TCE 011954651-01

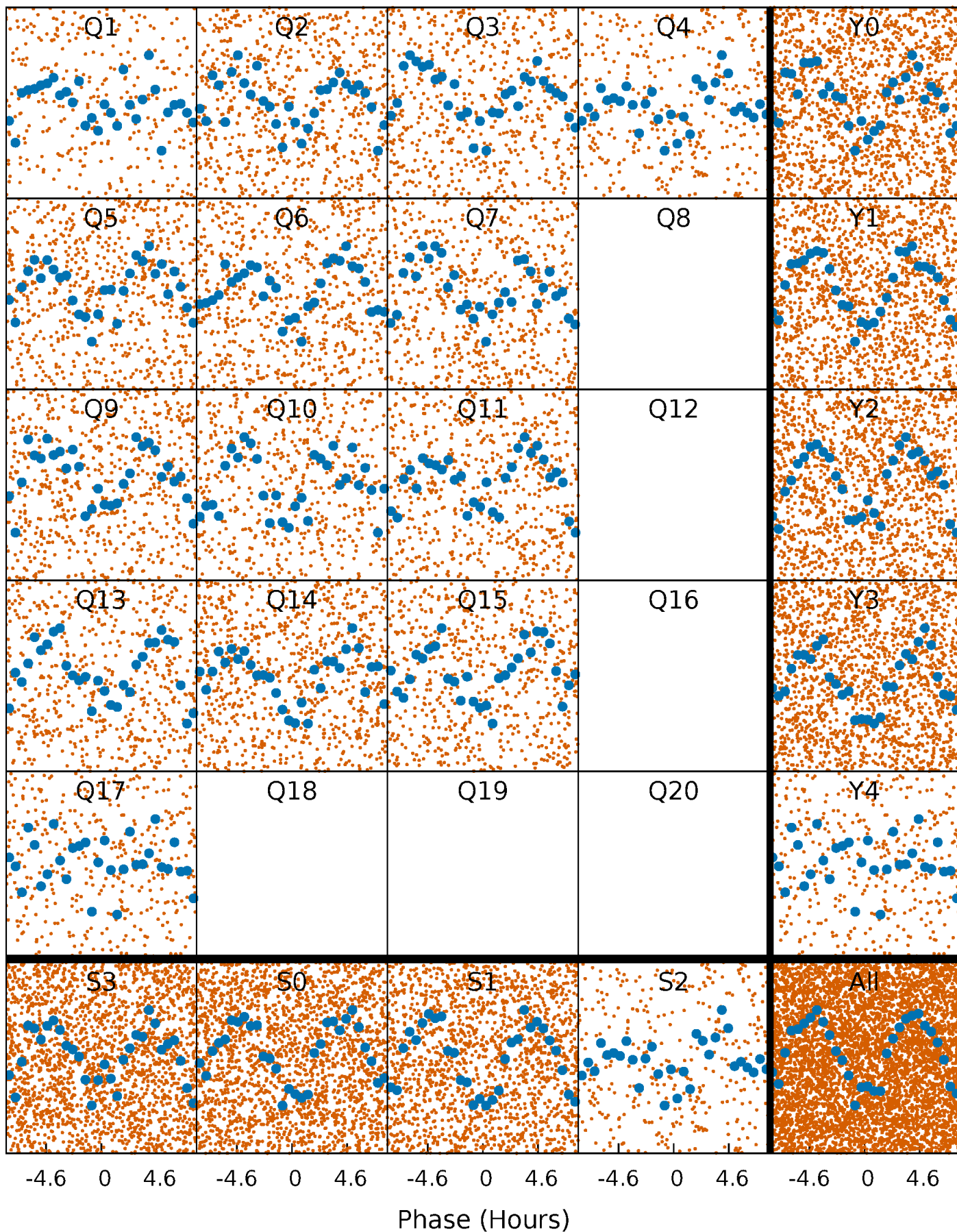


Non-Whitened Vs. Whitened Light Curve



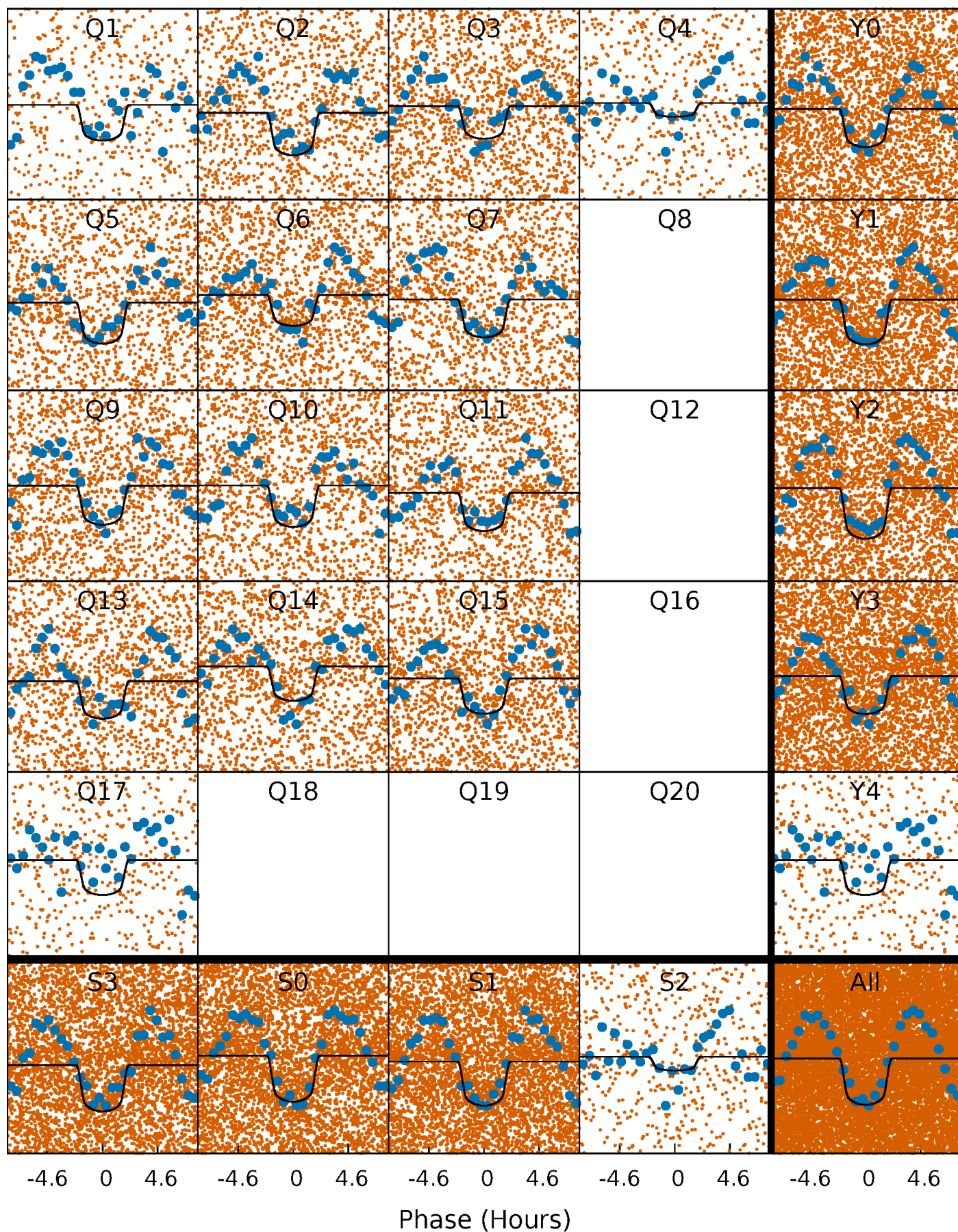
PDC Quarter-Phased Transit Curves

TCE 011954651-01 P= 0.700292 Days $T_0=132.024552$ (BKJD)



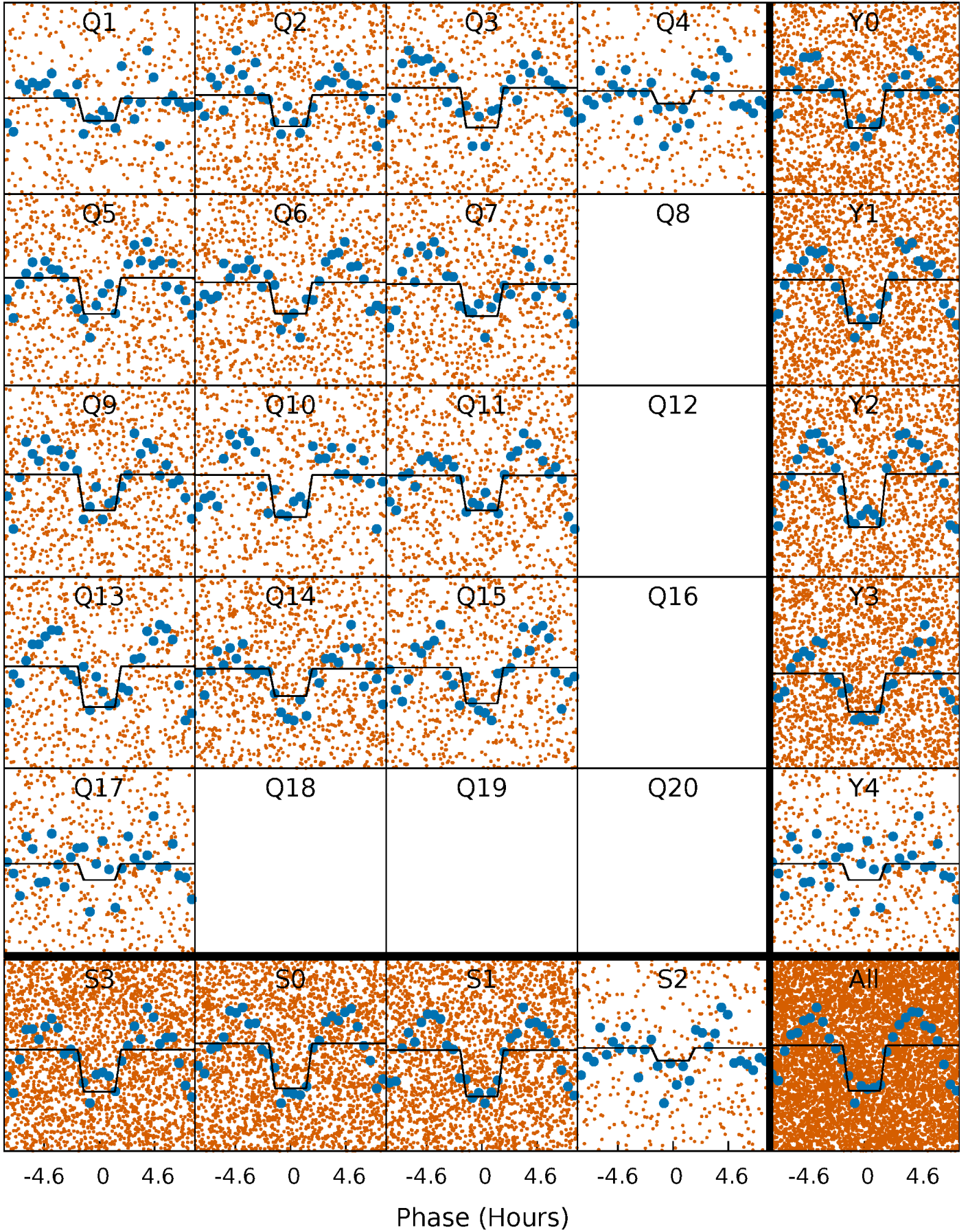
DV Quarter-Phased Transit Curves

TCE 011954651-01 P= 0.700292 Days $T_0=132.024552$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

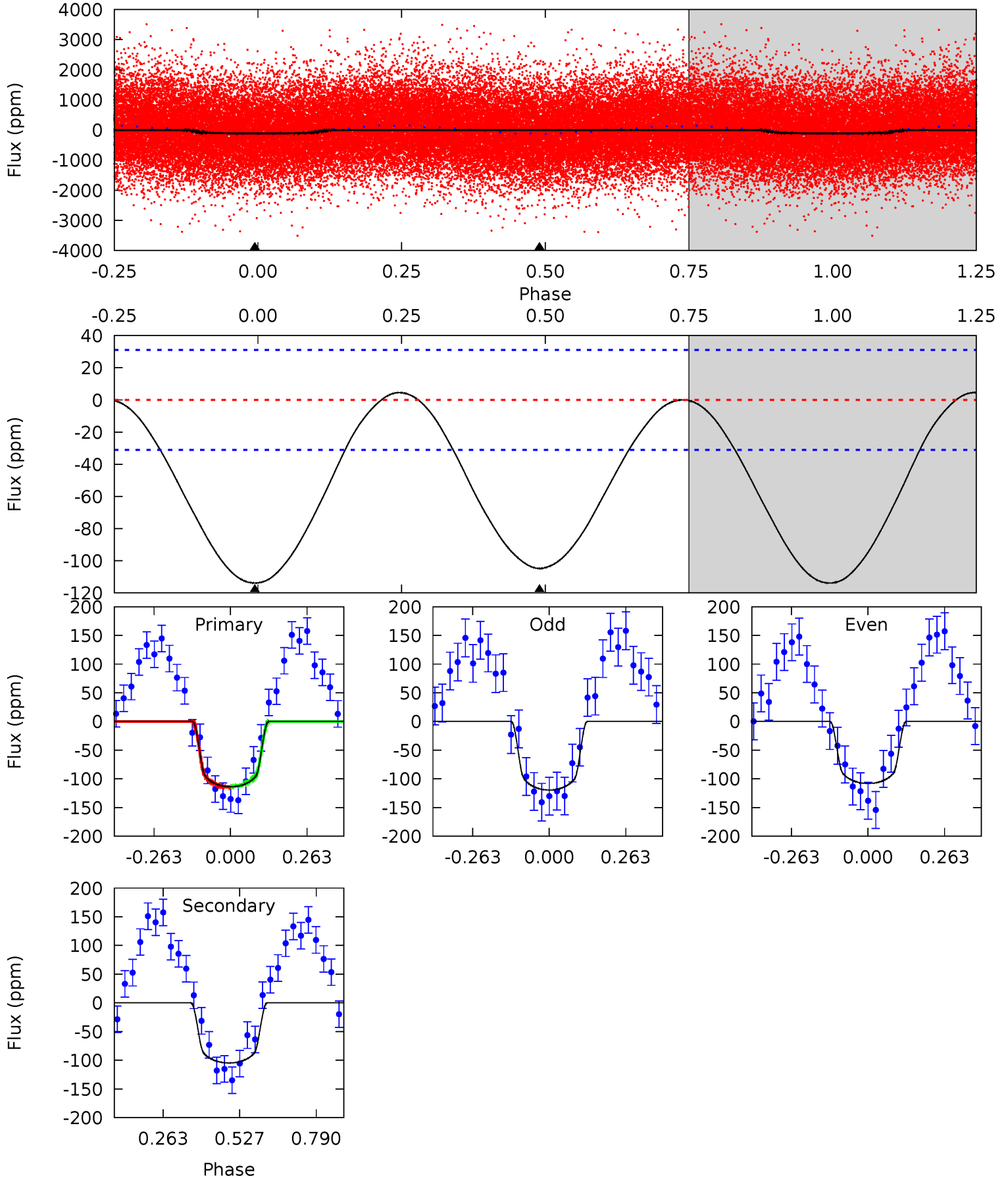
TCE 011954651-01 P= 0.700292 Days $T_0=132.024552$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-01, P = 0.700292 Days, E = 131.324260 Days

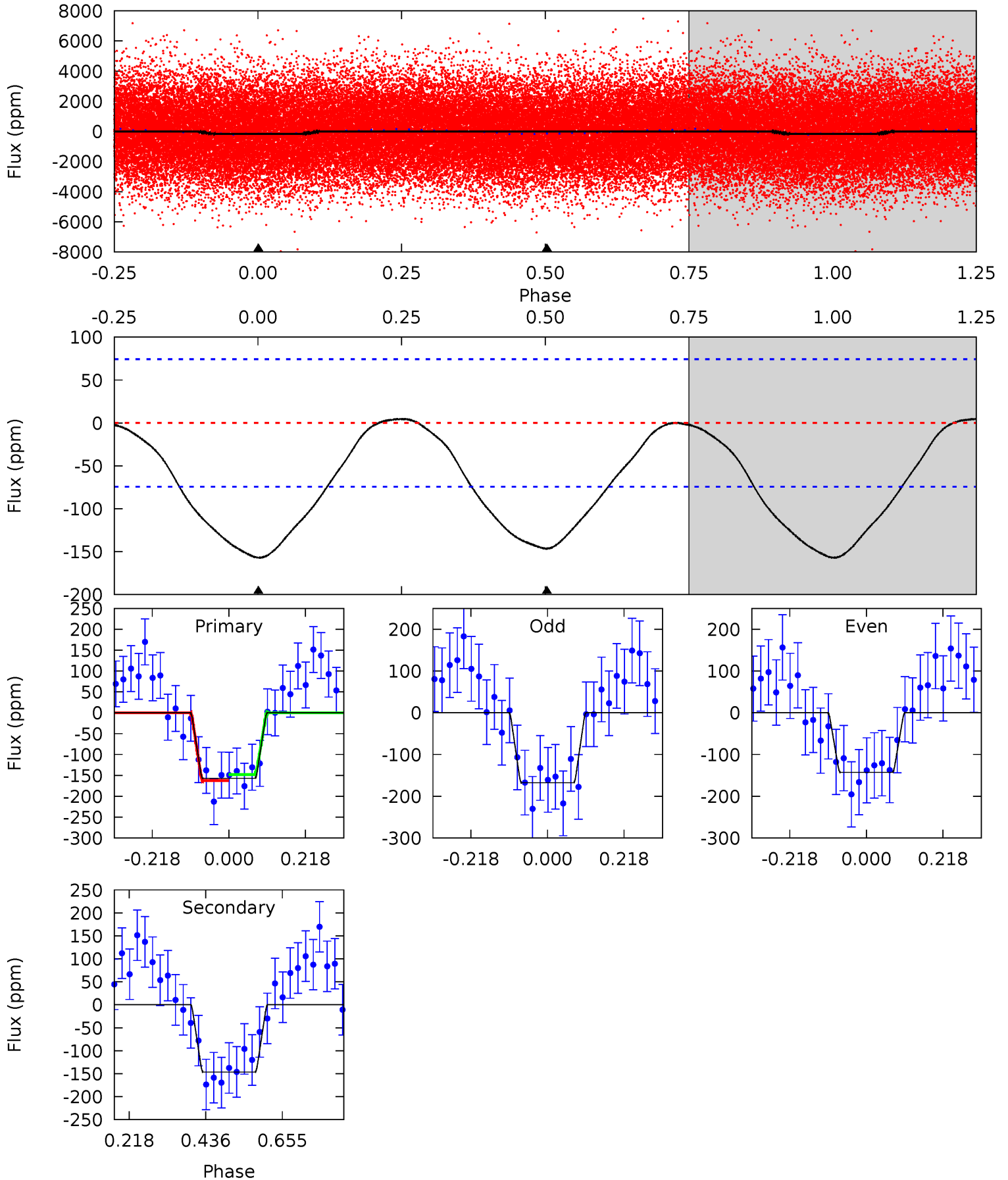
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	14.7	0	0	4.36	1.12	0.35	15.9	15.9	14.7	14.7	0.80	1.03	0.04	0.13



Alt Model-Shift Uniqueness Test

011954651-01, P = 0.700292 Days, E = 131.324260 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.30	8.68	0	0	4.40	1.23	0.25	9.30	9.30	8.68	8.68	0.74	1.17	0.03	0.41



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-105 ± 7	$2.30^{+0.62}_{-0.62}$	4237^{+363}_{-381}	5906^{+916}_{-591}	$2.935^{+2.517}_{-1.099}$
Alt.	-146 ± 17	$2.33^{+0.71}_{-0.65}$	4274^{+311}_{-383}	6425^{+1121}_{-722}	$3.879^{+3.775}_{-1.539}$

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 $A_{obs} \gg 1.0$

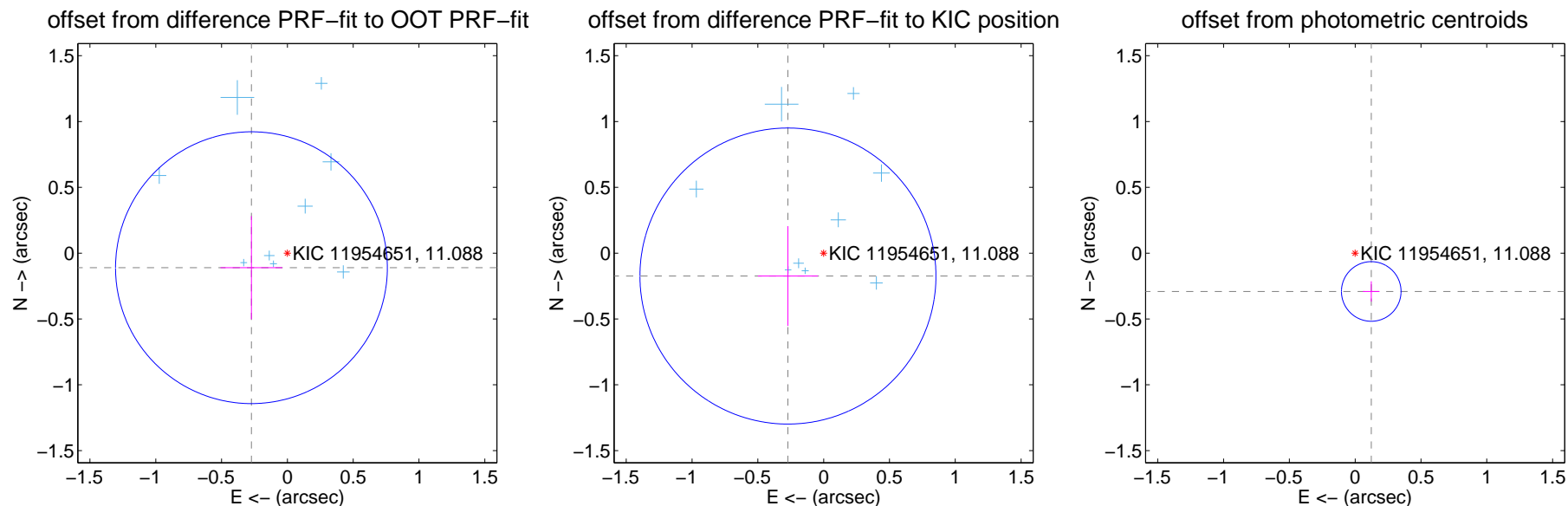
DV Centroid Data

Supplemental centroid analysis for 011954651-01. **Kepler magnitude: 11.09.** Transit SNR 11.80

There are 11 quarters with good PRF difference image offsets

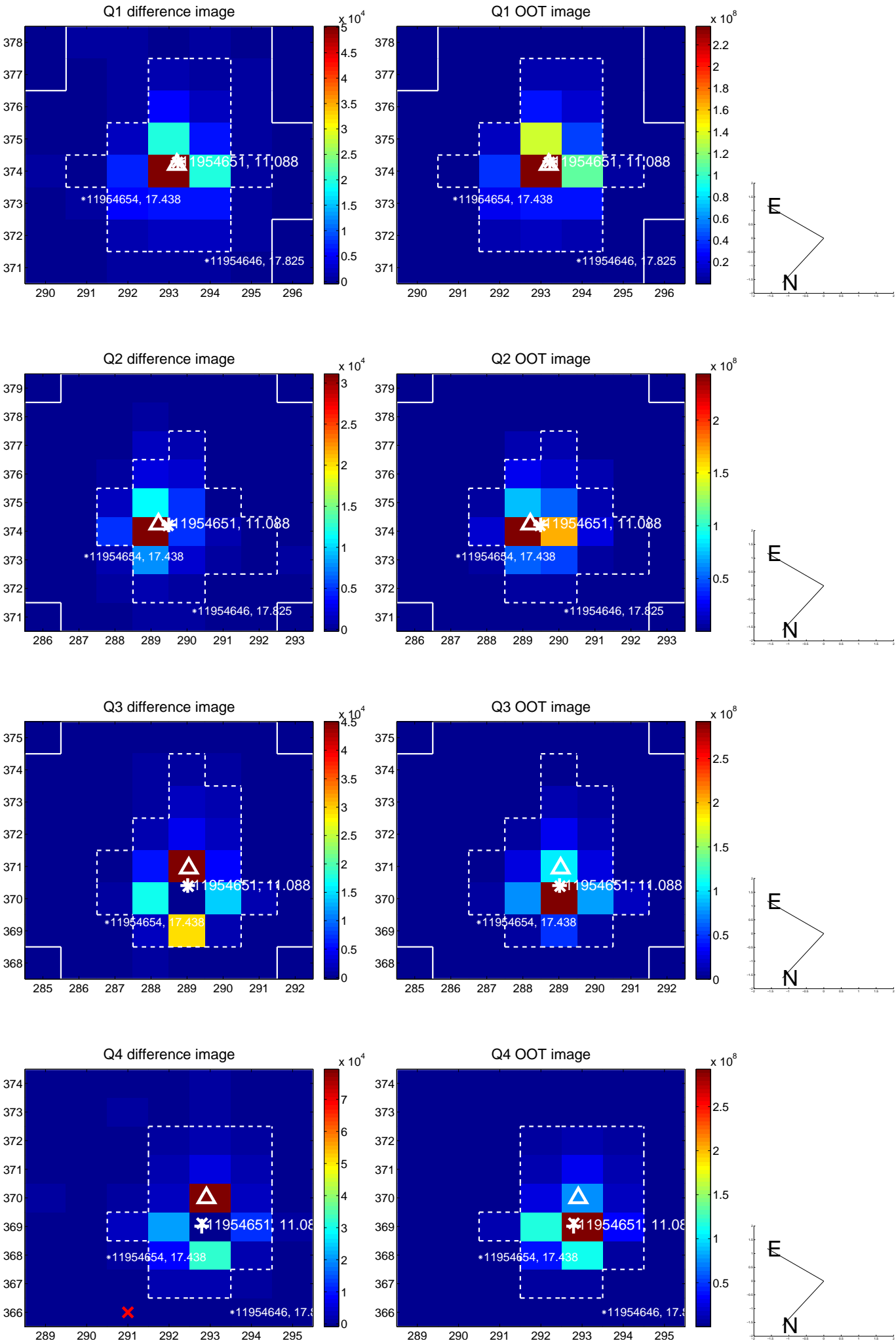
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.295 ± 0.344	0.86	0.273 ± 0.235	-0.111 ± 0.392
PRF-fit source offset from KIC position	0.322 ± 0.375	0.86	0.271 ± 0.228	-0.174 ± 0.379
photometric centroid source offset	0.32 ± 0.08	4.18	-0.12 ± 0.06	-0.29 ± 0.08

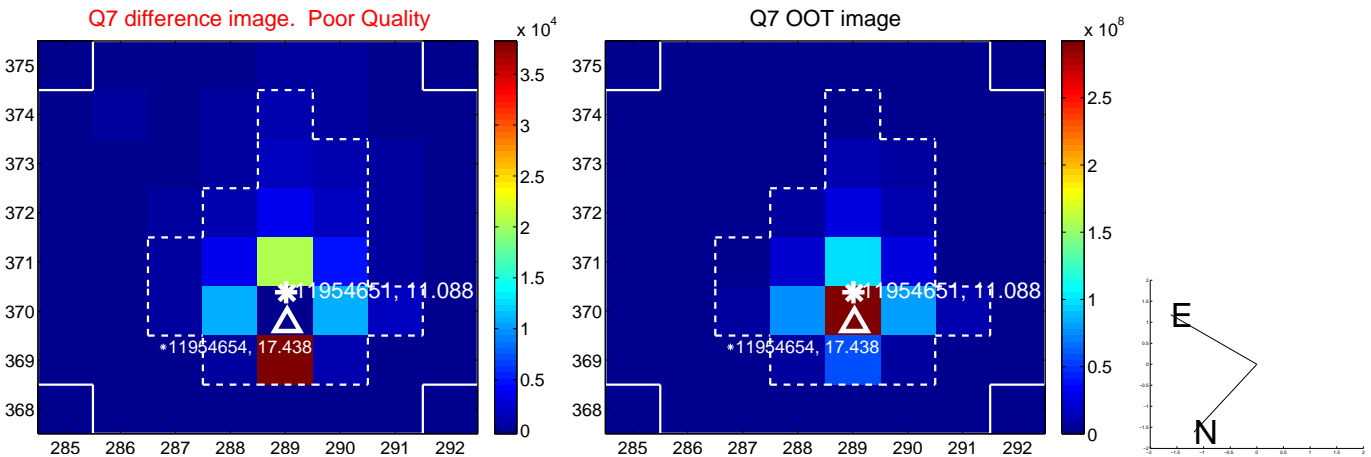
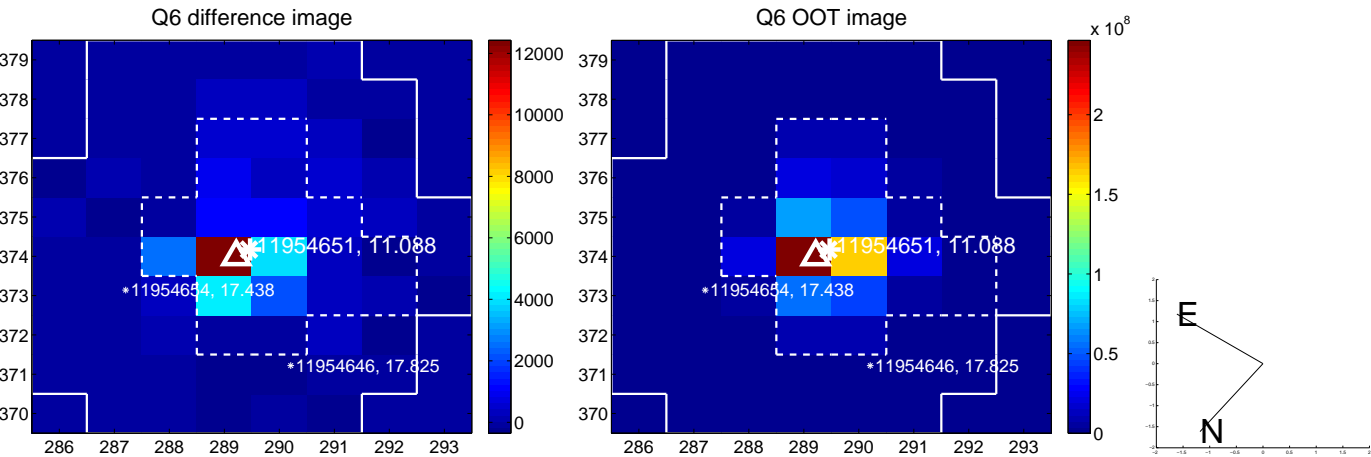
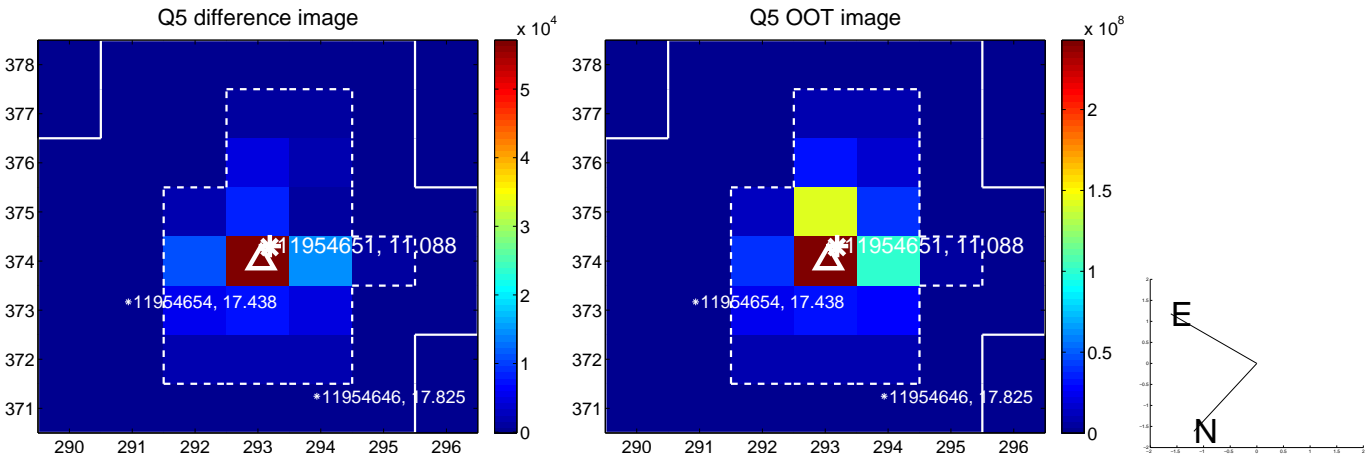


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

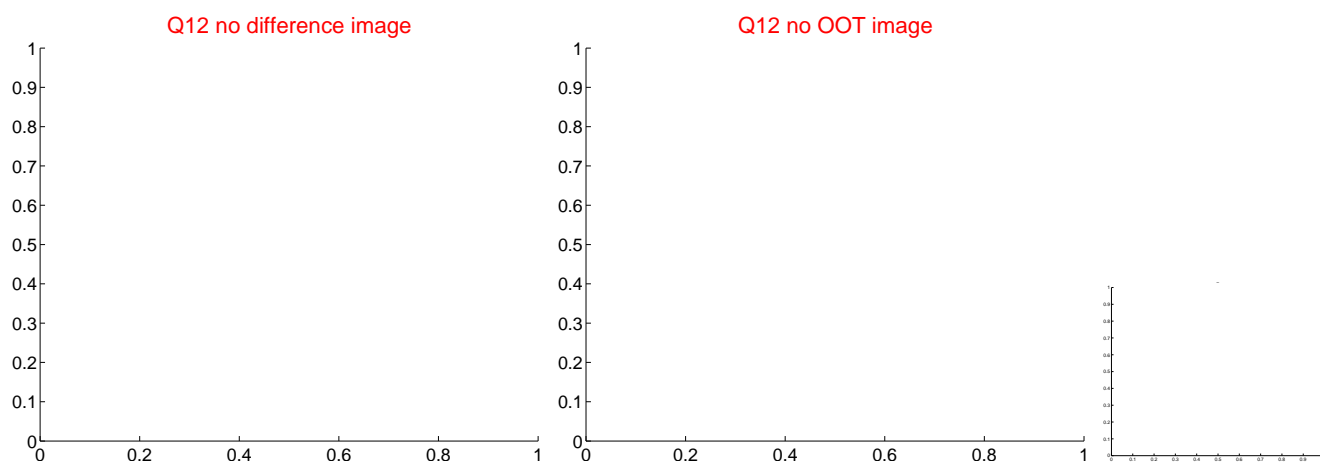
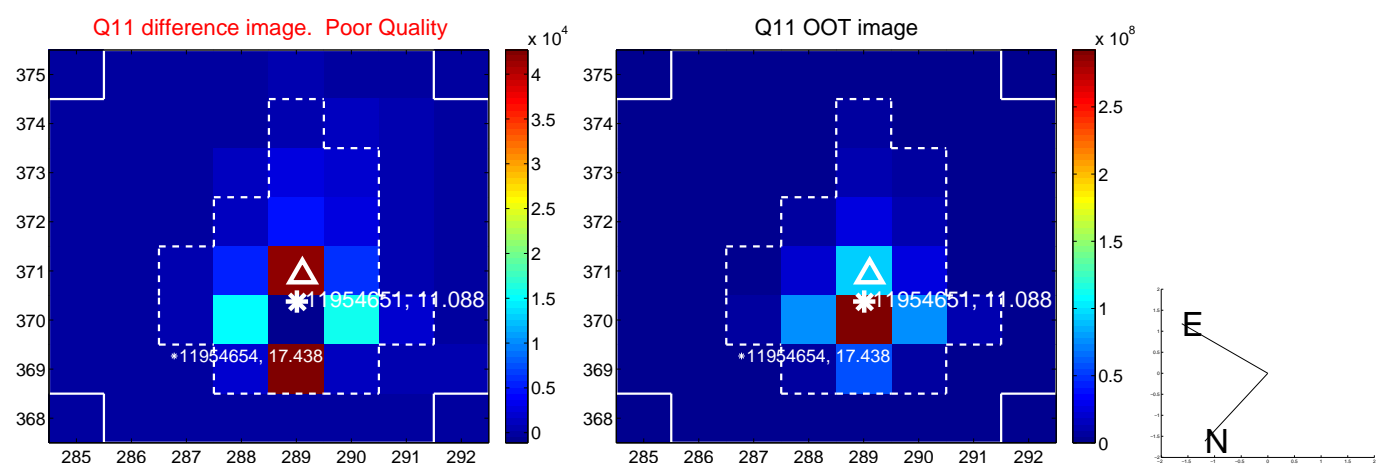
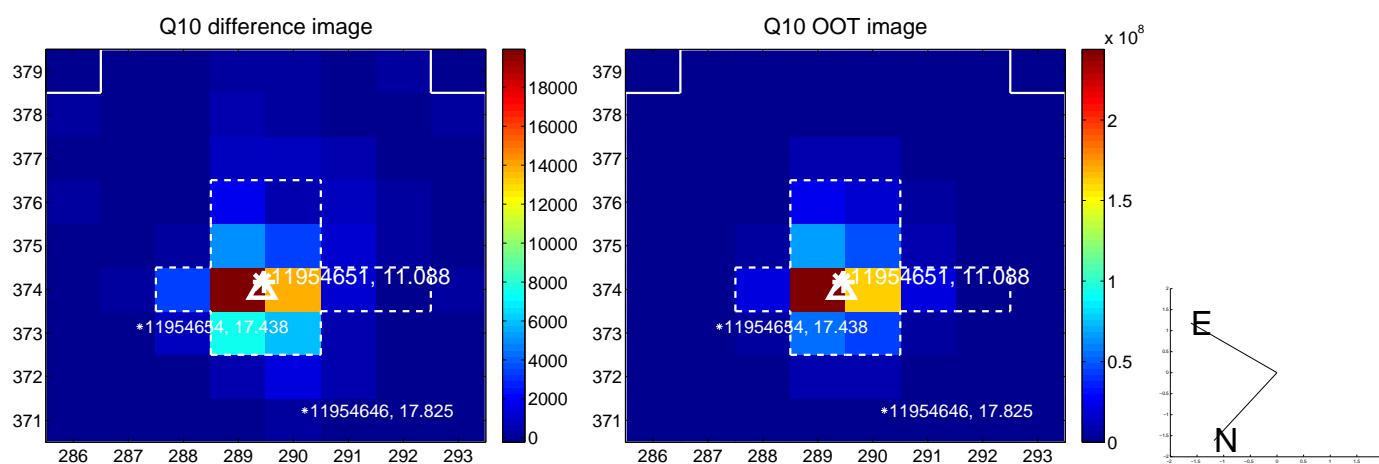
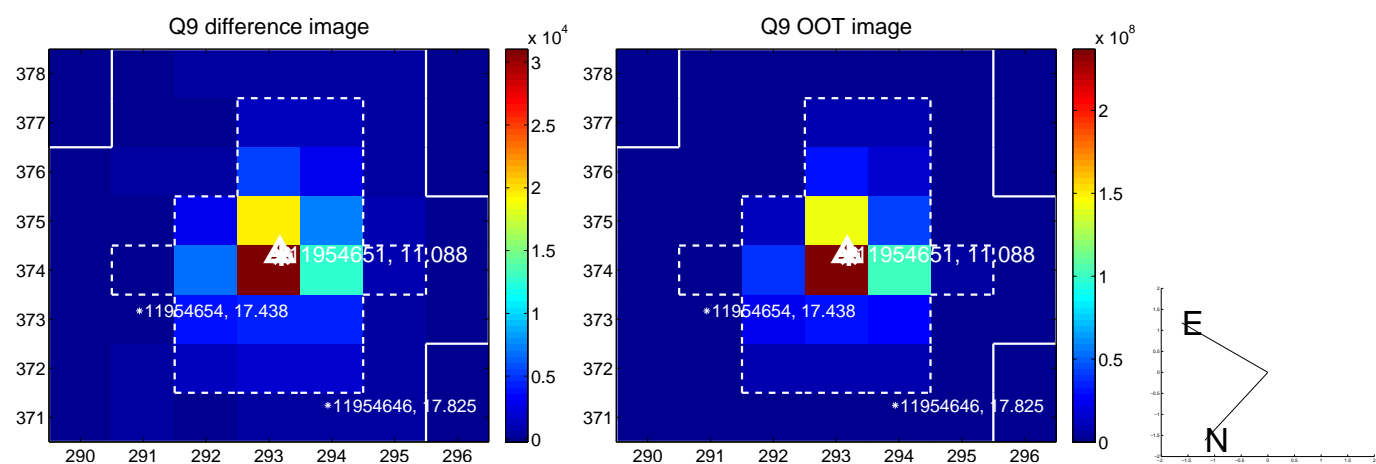
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



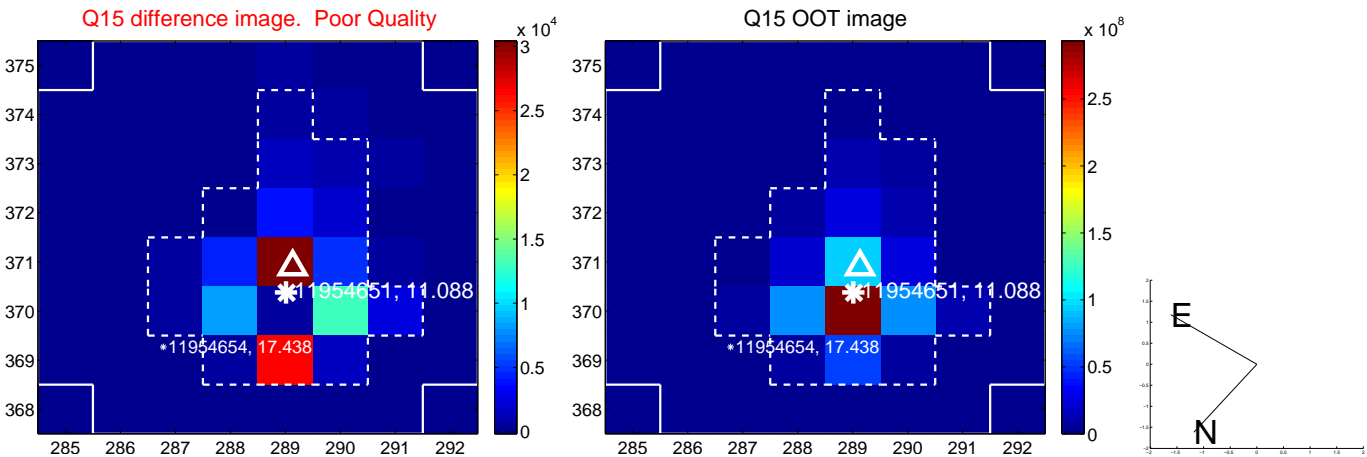
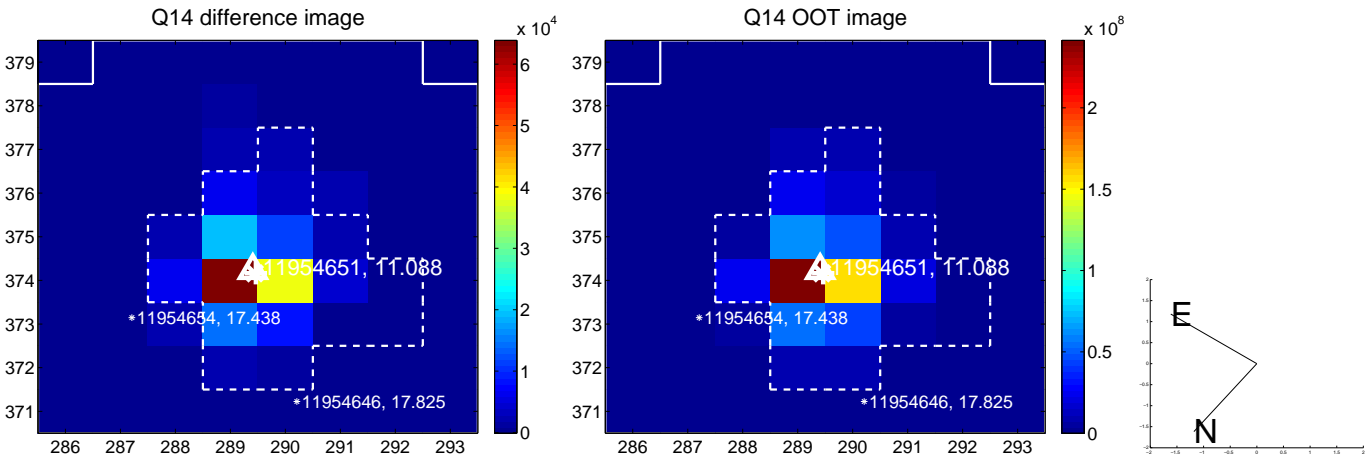
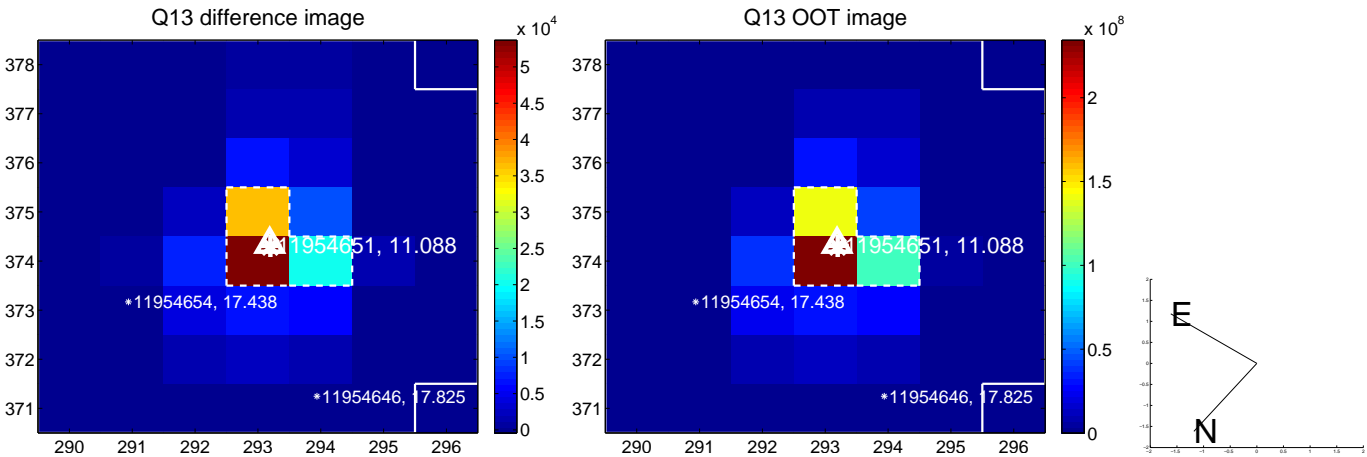
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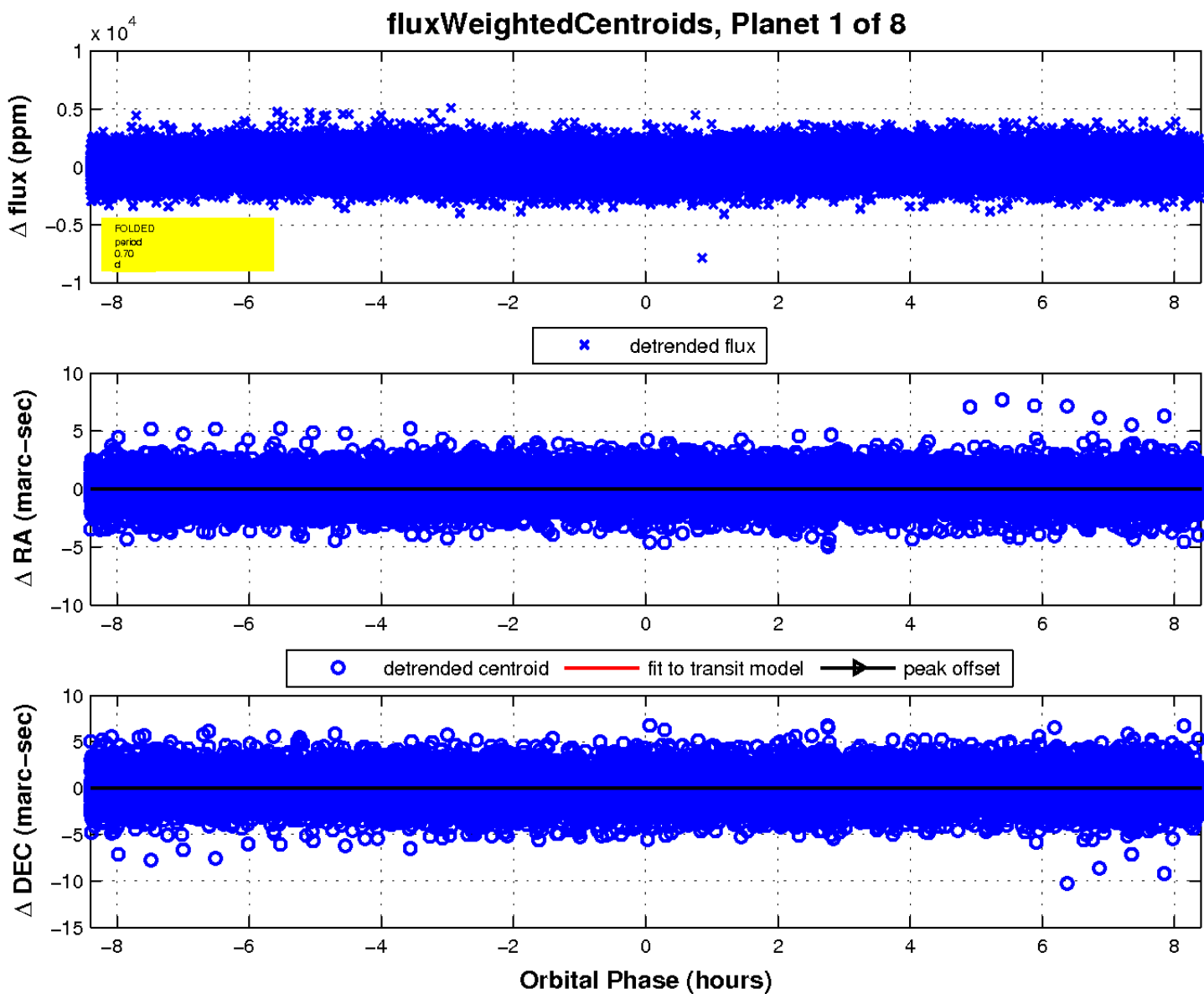
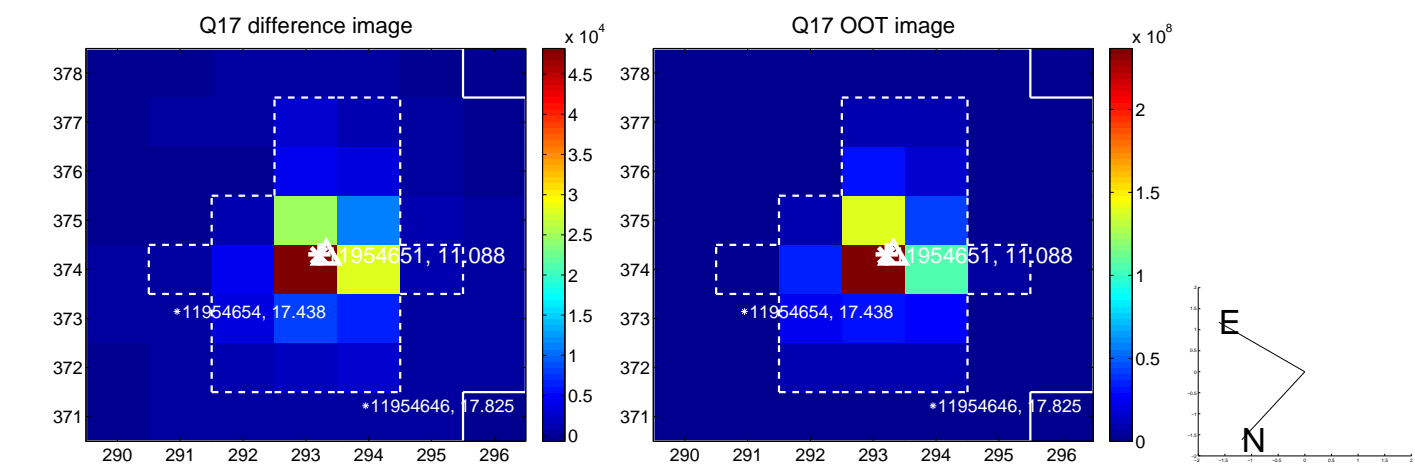
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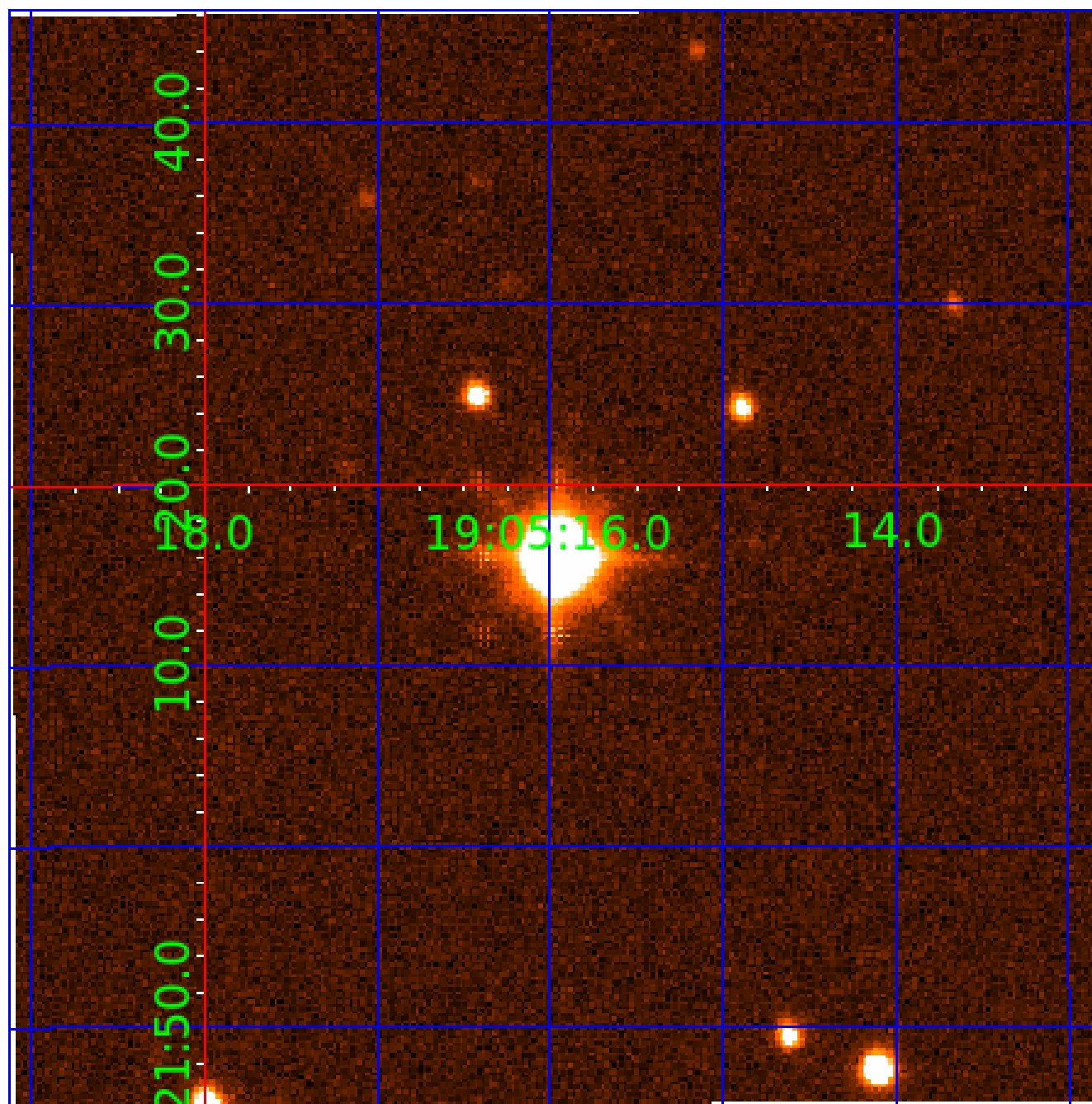


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011954651

Q1-17 DR25 TCE Parameters

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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

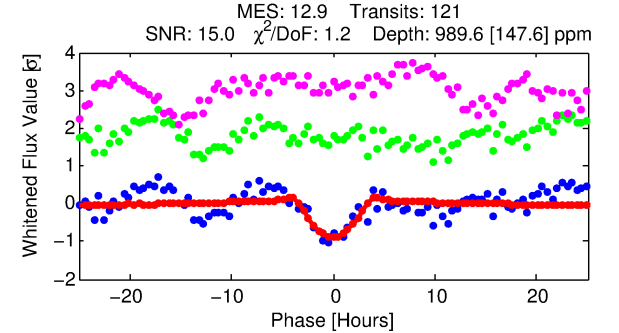
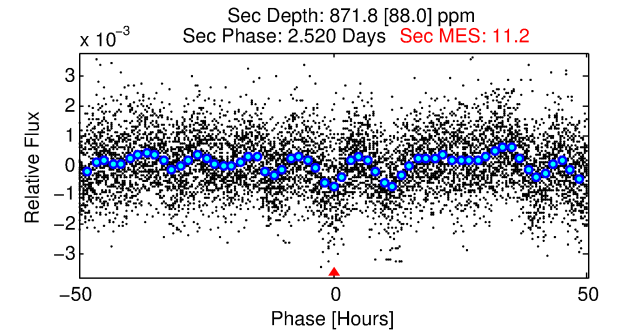
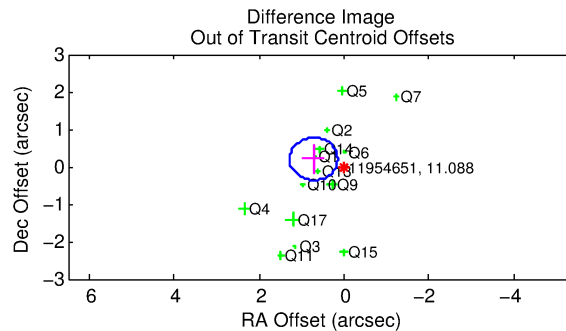
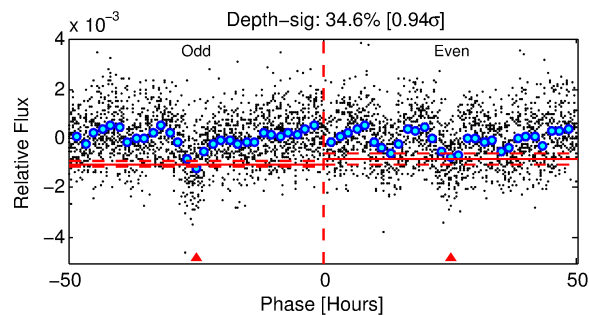
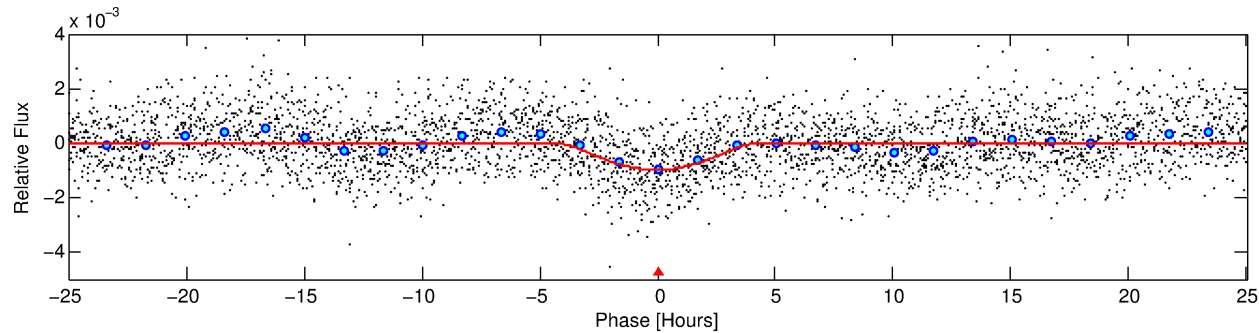
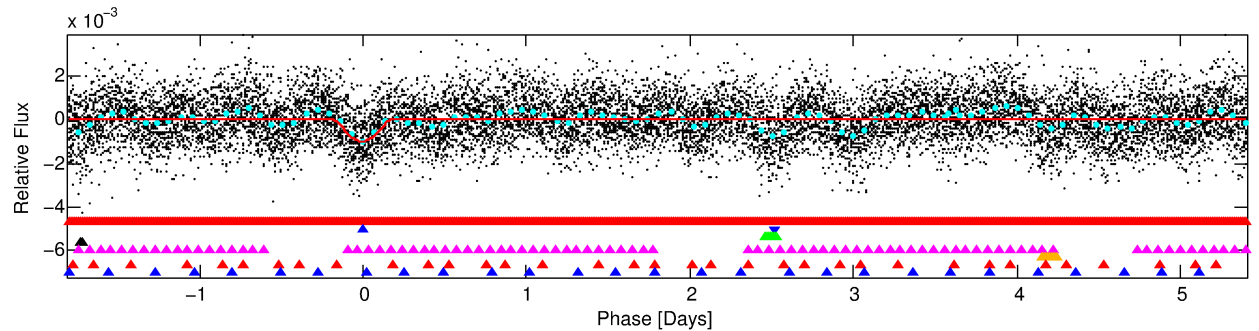
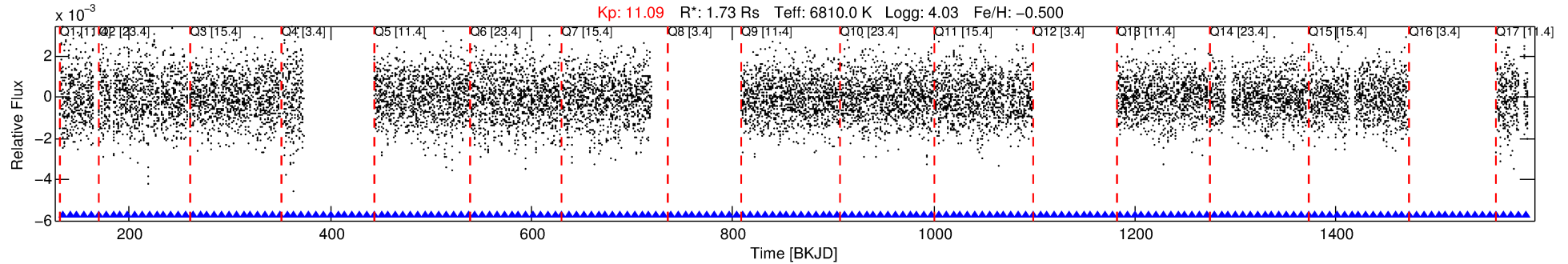
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-02

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 2 of 8 Period: 7.201 d



DV Fit Results:

Period = 7.20091 [0.00012] d
Epoch = 133.7619 [0.0140] BKJD
Rp/R* = 0.0535 [0.1016]
a/R* = 2.42 [0.88]
b = 1.00 [0.15]
Seff = 969.38 [520.03]
Teq = 1423 [191] K
Rp = 10.09 [19.44] Re
a = 0.0770 [0.0246] AU
Ag = 27.95 [107.11] [0.25 σ]
Teffp = 5058 [4808] K [0.76 σ]

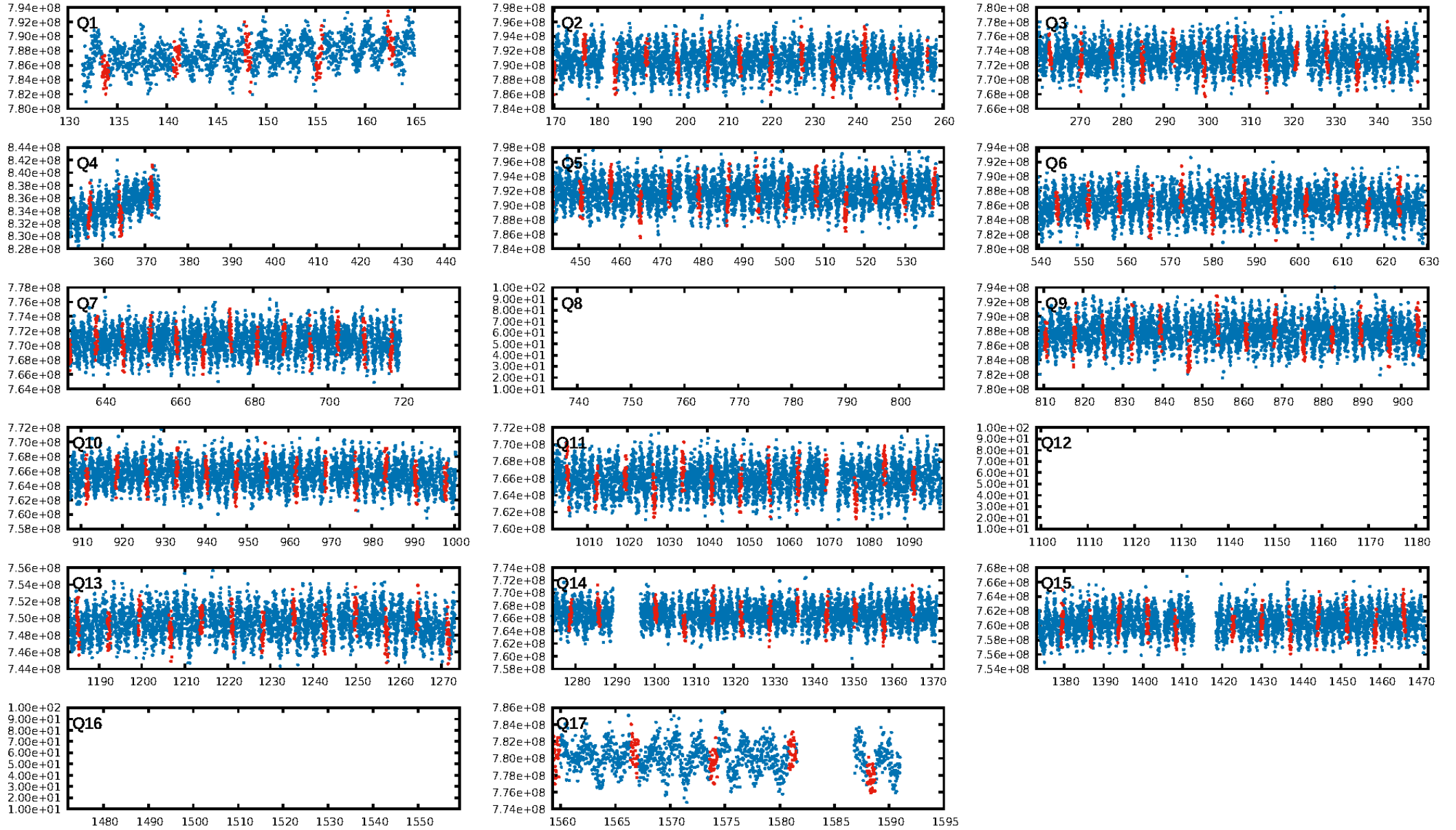
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: 100.0% [22.61 σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [110/110]
GhostDiagnostic-chr: 1.584
Centroid-sig: 36.2%
Centroid-so: 0.028 arcsec [0.79 σ]
OotOffset-rm: 0.742 arcsec [3.92 σ]
KicOffset-rm: 0.724 arcsec [3.73 σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/14]

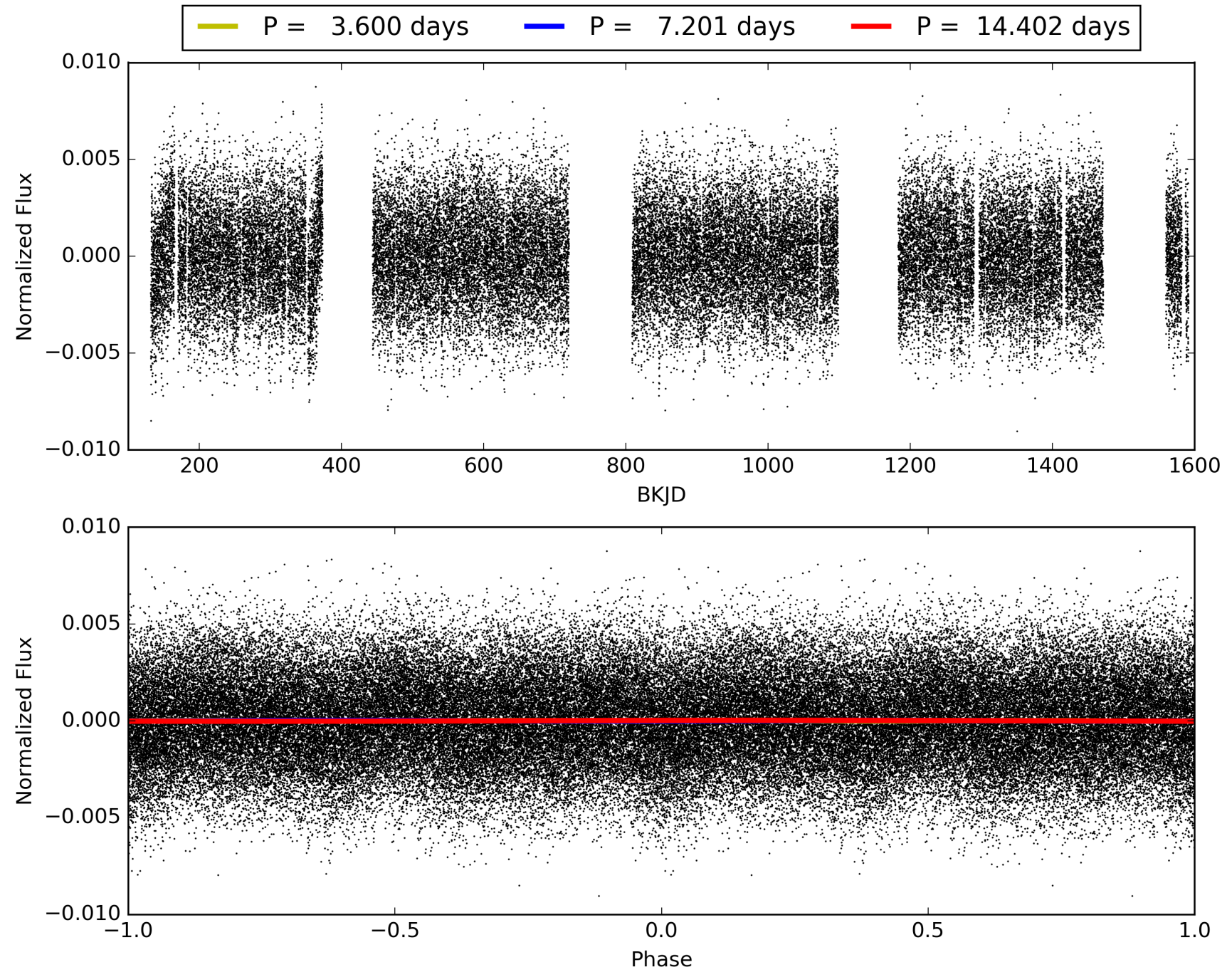
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:18:12 Z

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

TCE 011954651-02, PDC Light Curves

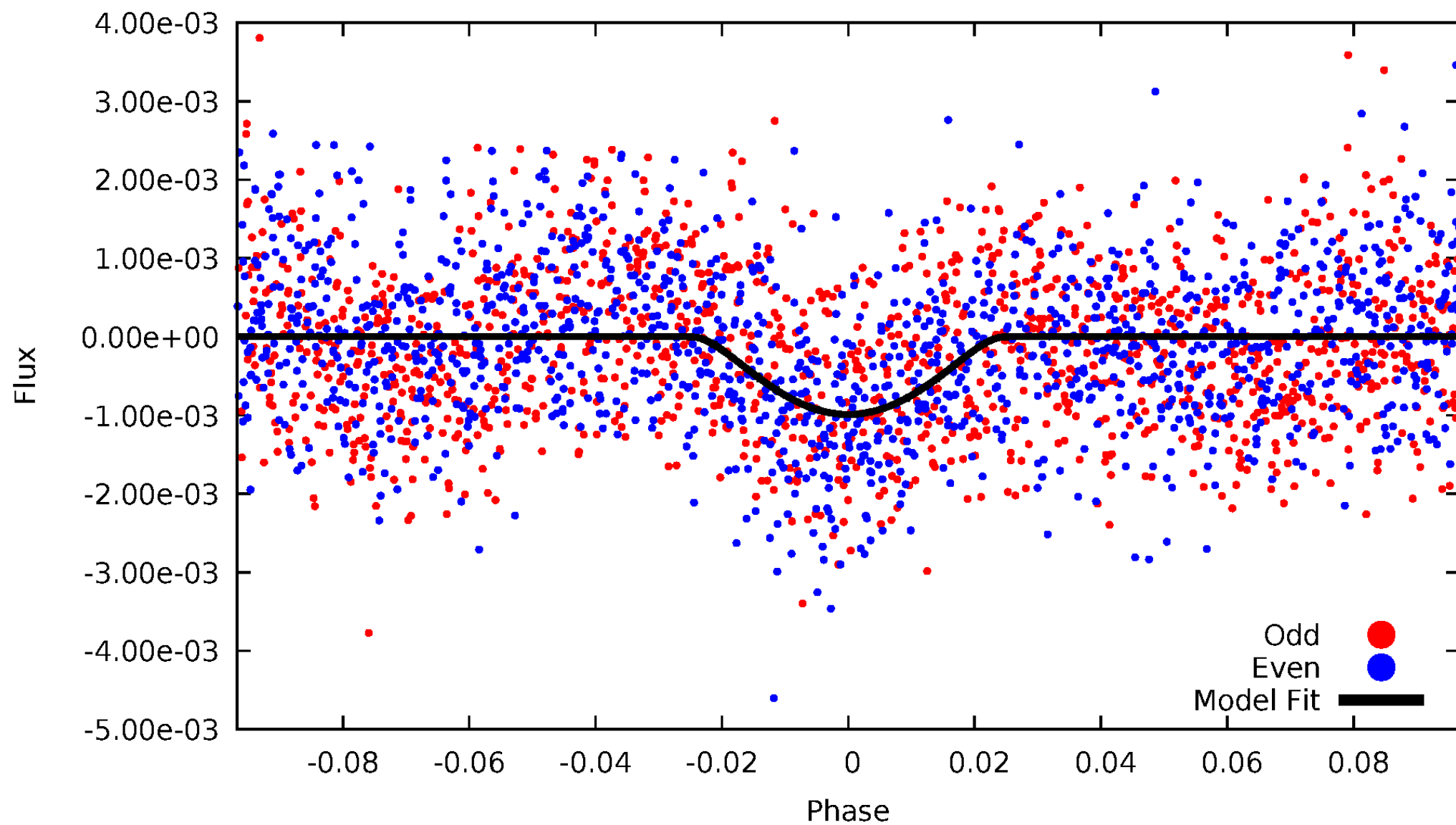


TCE 011954651-02



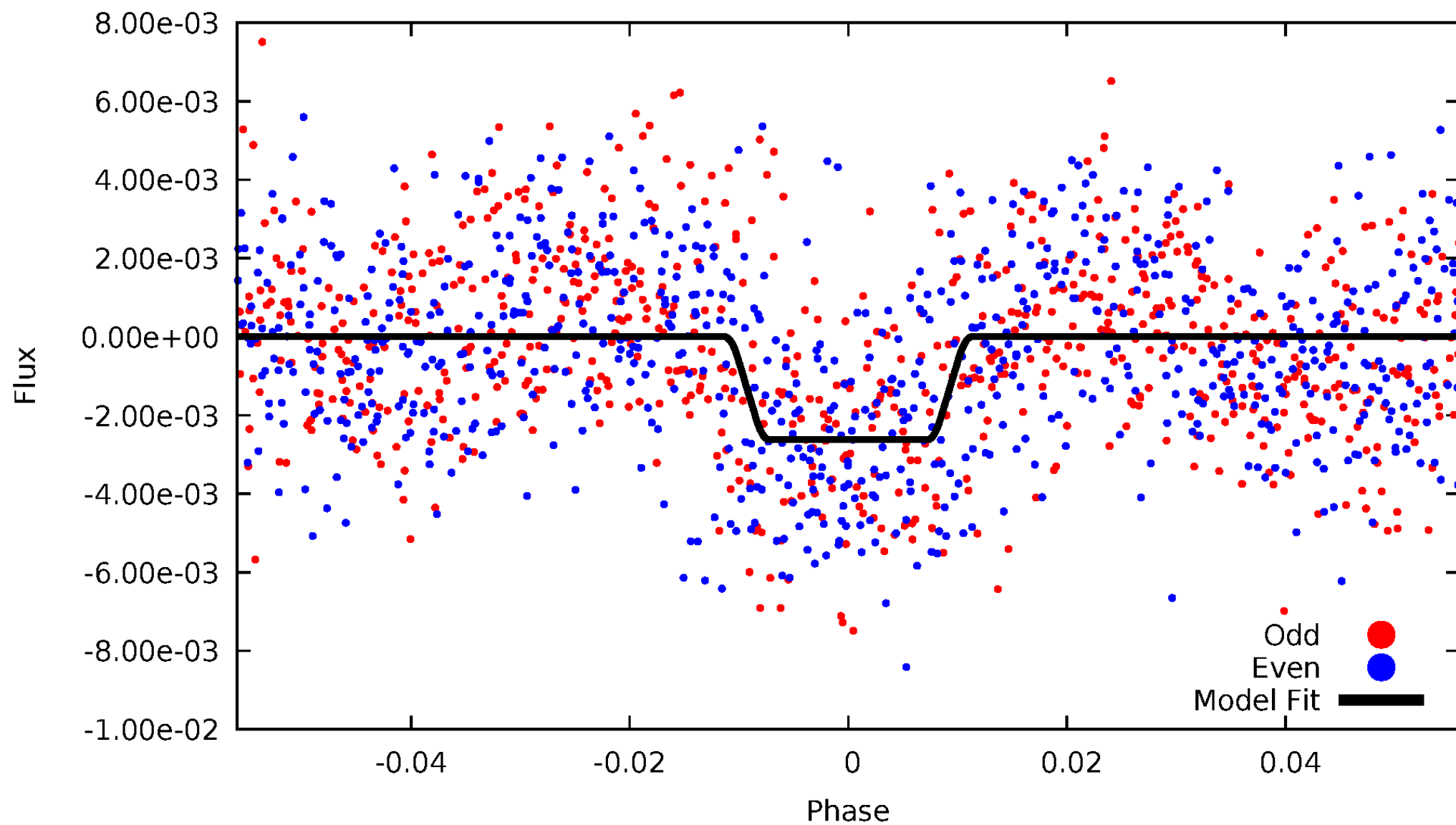
DV Odd/Even

TCE 011954651-02



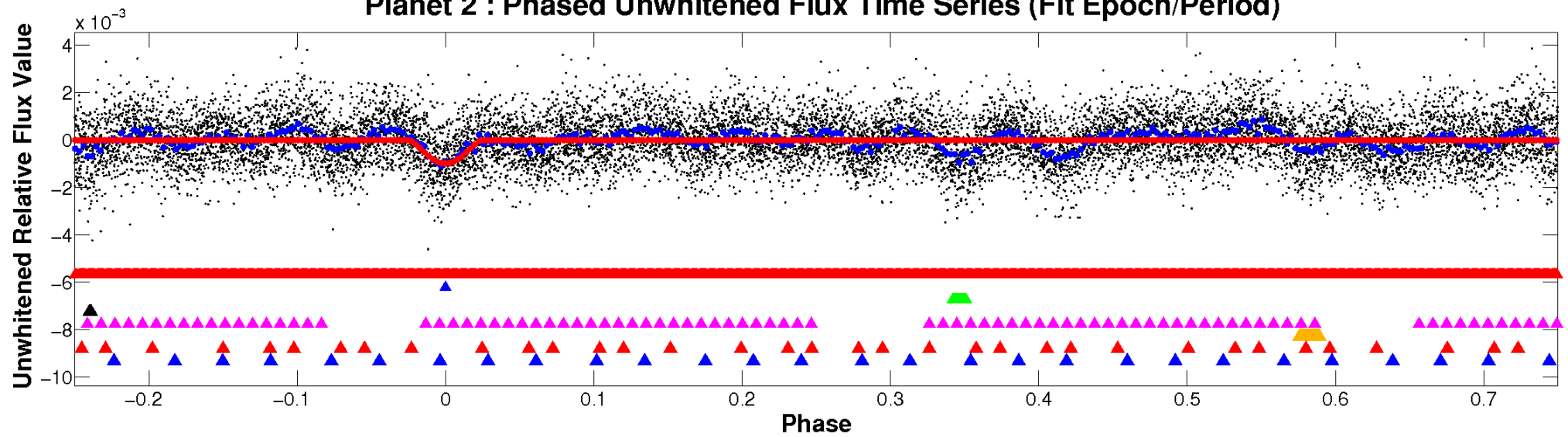
ALT Odd/Even

TCE 011954651-02

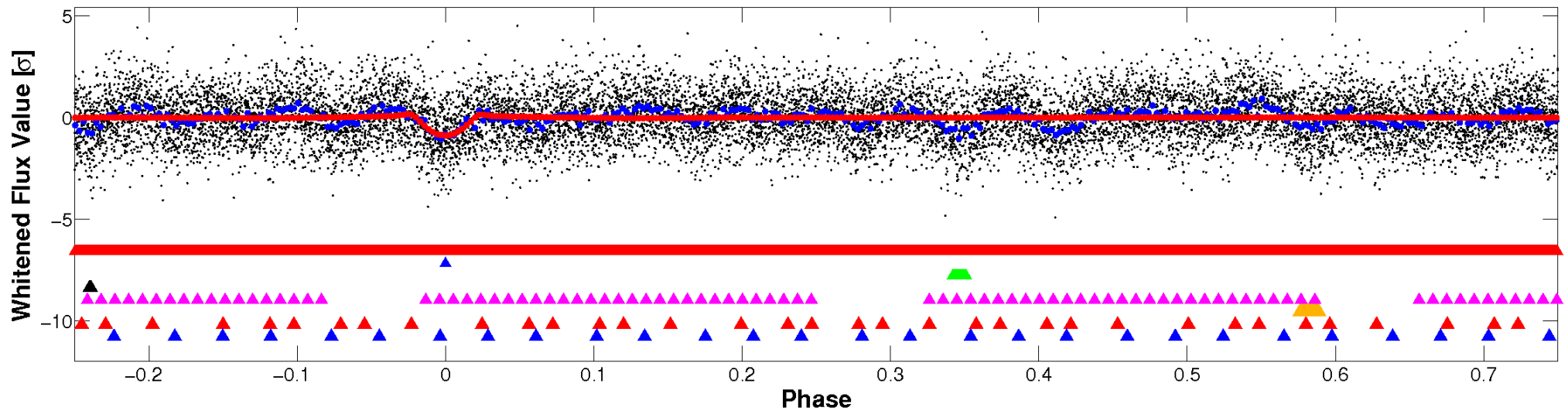


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

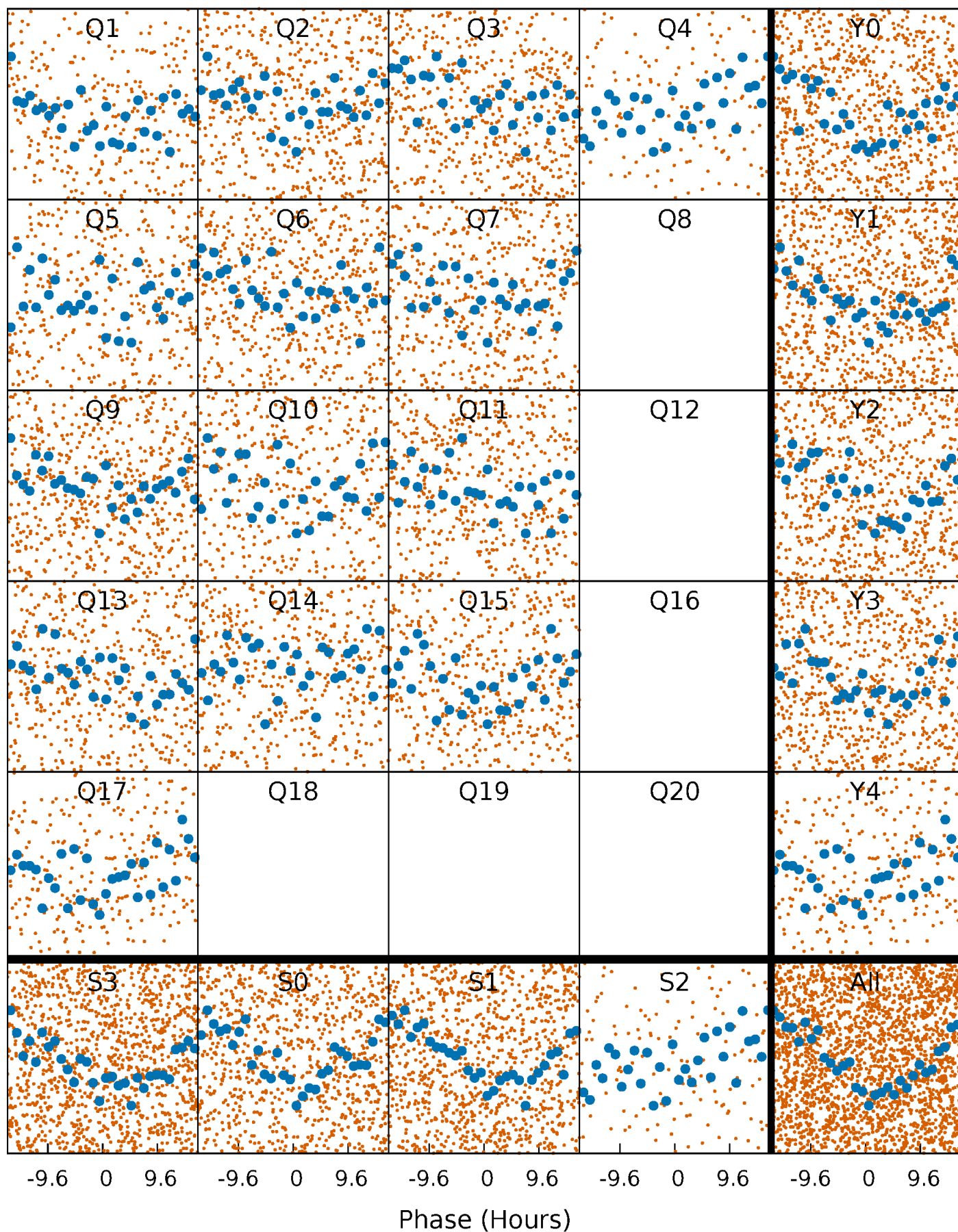


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



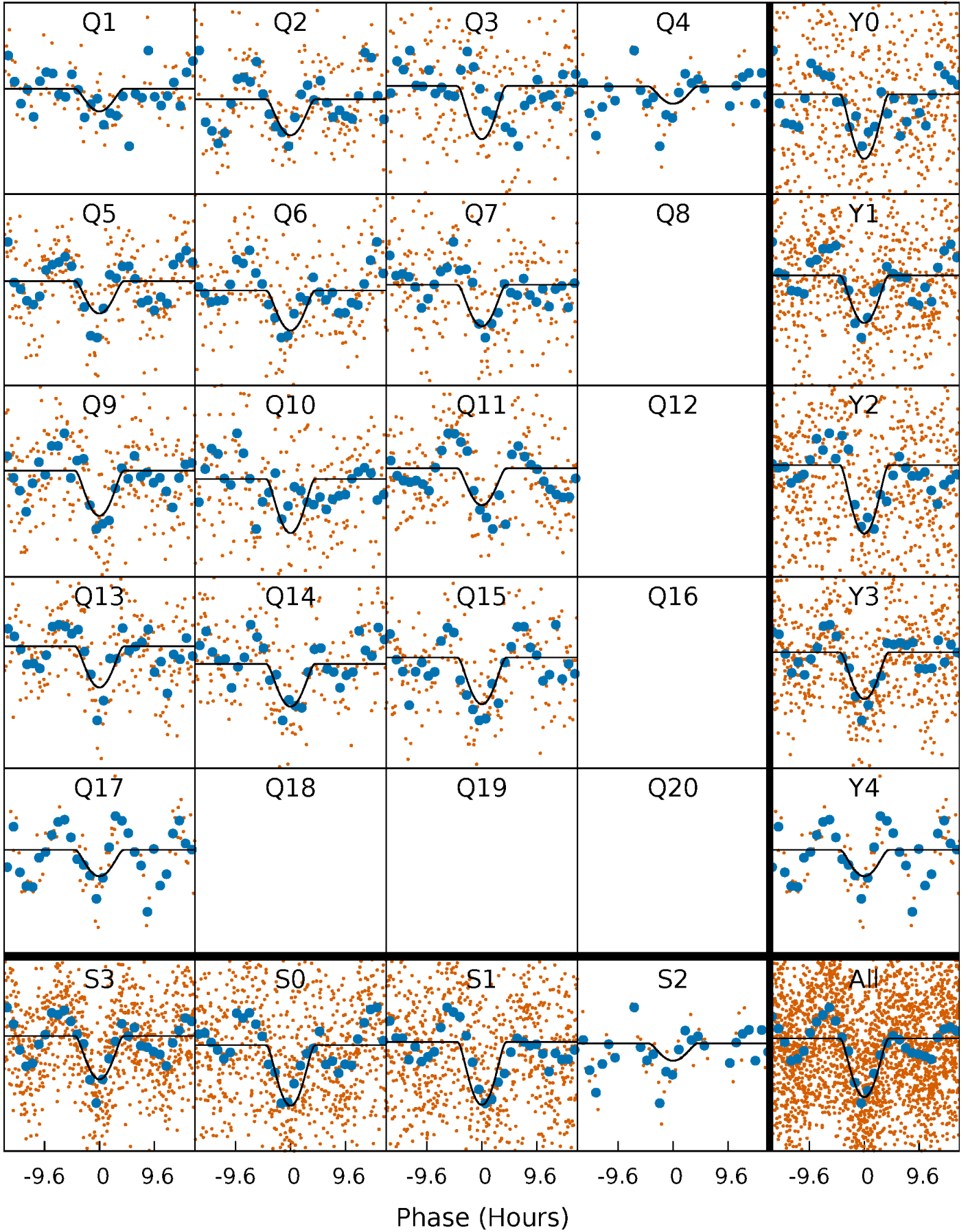
PDC Quarter-Phased Transit Curves

TCE 011954651-02 P= 7.200909 Days $T_0=133.761875$ (BKJD)



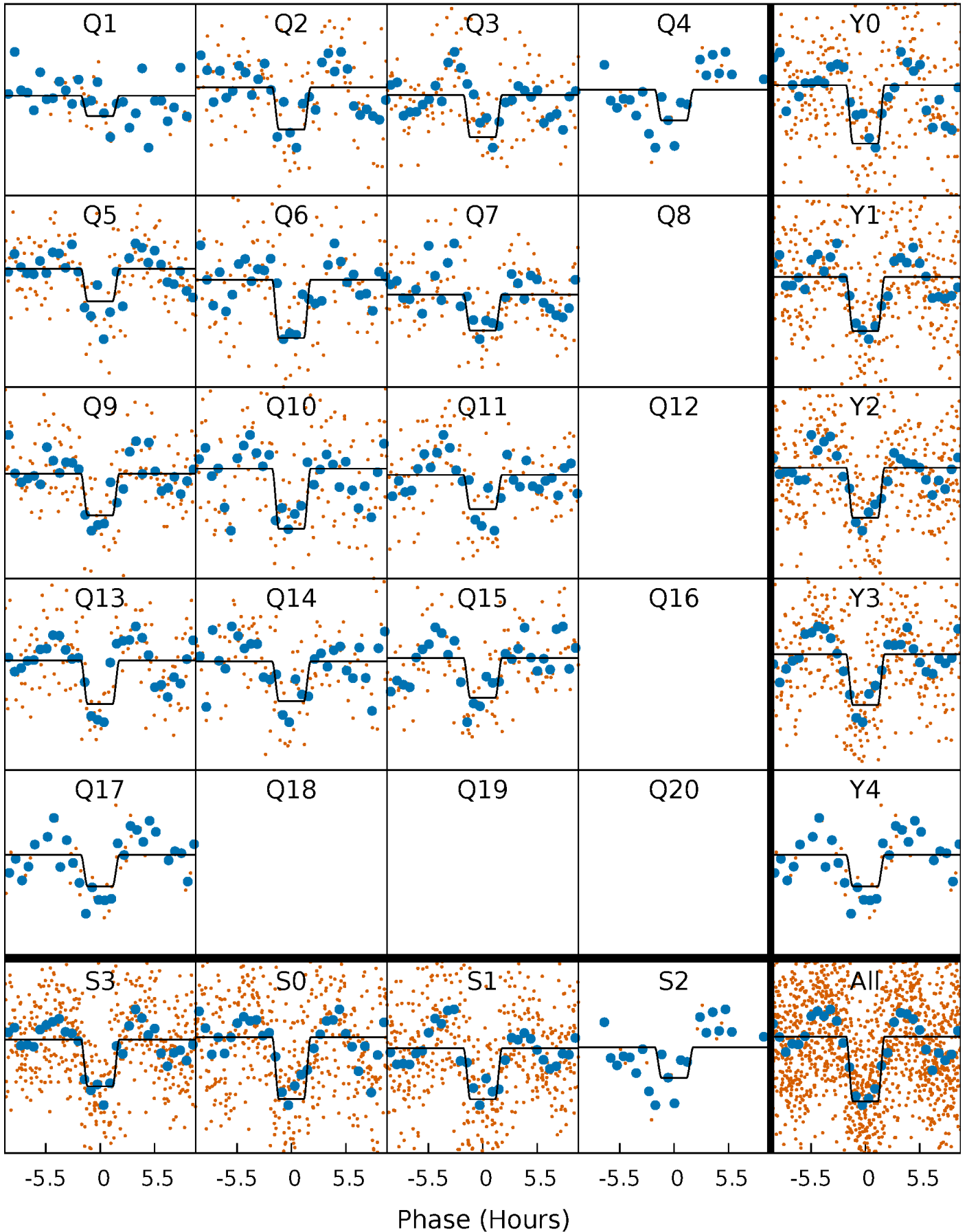
DV Quarter-Phased Transit Curves

TCE 011954651-02 P= 7.200909 Days $T_0=133.761875$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

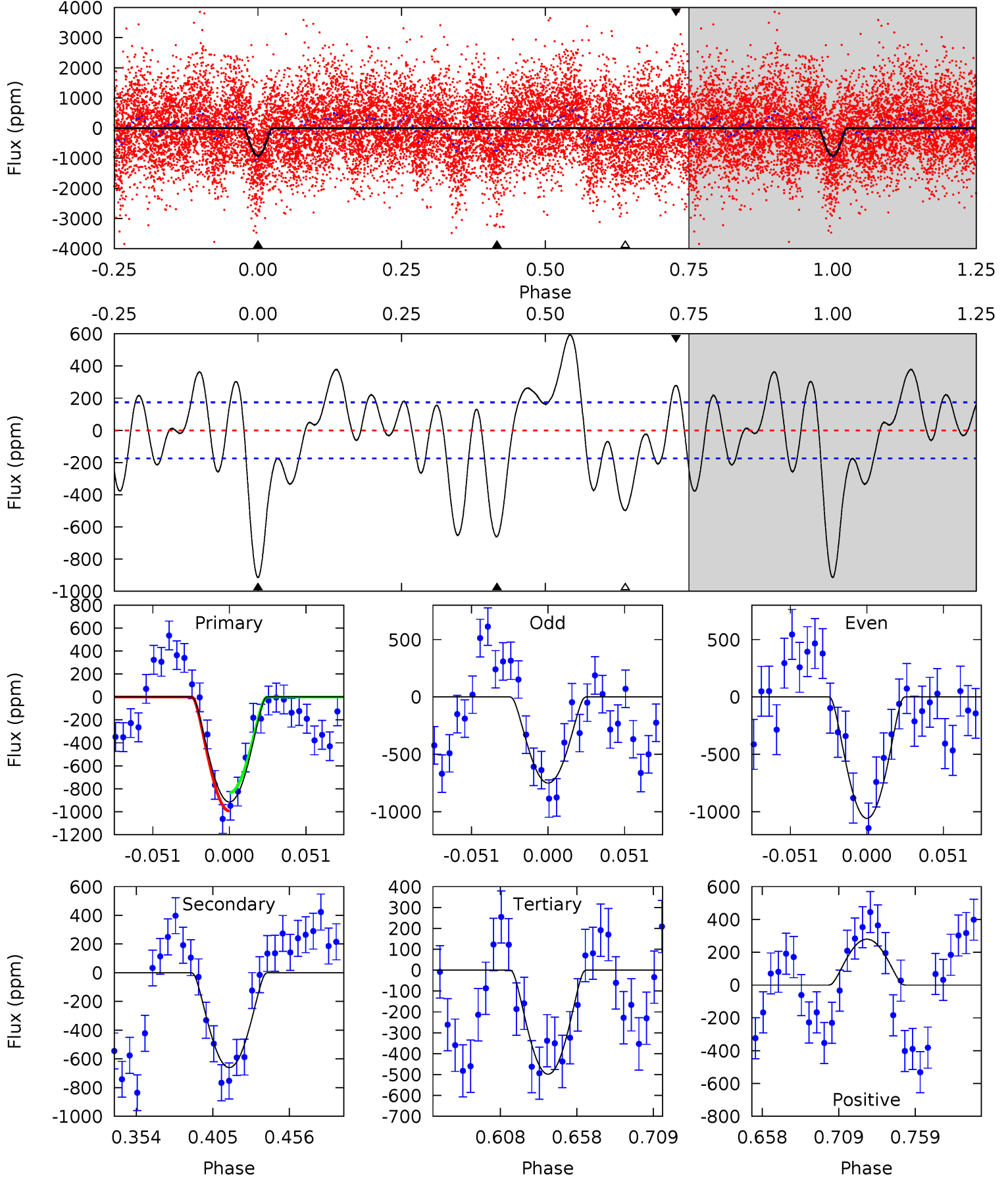
TCE 011954651-02 $P = 7.200750$ Days $T_0 = 133.776049$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-02, P = 7.200909 Days, E = 126.560966 Days

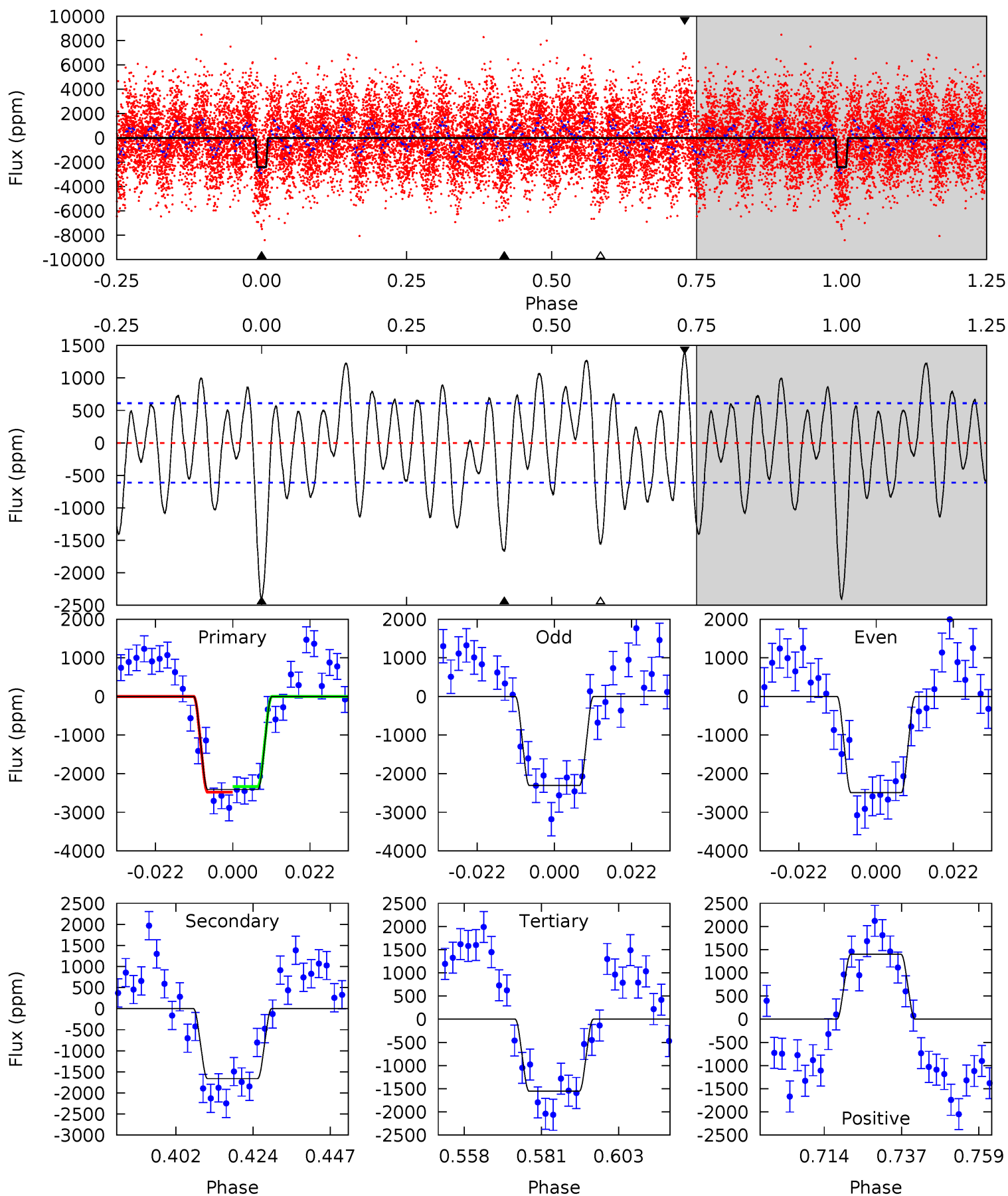
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	17.8	13.5	7.55	4.71	1.95	6.67	11.3	17.2	4.38	10.3	4.15	0.19	0.39	2.15



Alt Model-Shift Uniqueness Test

011954651-02, P = 7.200750 Days, E = 126.575299 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	13.2	12.4	11.1	4.87	2.28	5.01	6.78	8.01	0.84	2.07	0.74	0.65	0.37	0.58



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-661 ± 37	$16.91^{+15.65}_{-11.69}$	1944^{+172}_{-182}	3856^{+2140}_{-737}	$7.786^{+69.311}_{-5.787}$
Alt.	-1661 ± 126	$15.83^{+16.38}_{-10.37}$	1970^{+155}_{-187}	4728^{+3327}_{-1078}	21^{+152}_{-16}

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 $A_{\text{obs}} \gg 1.0$

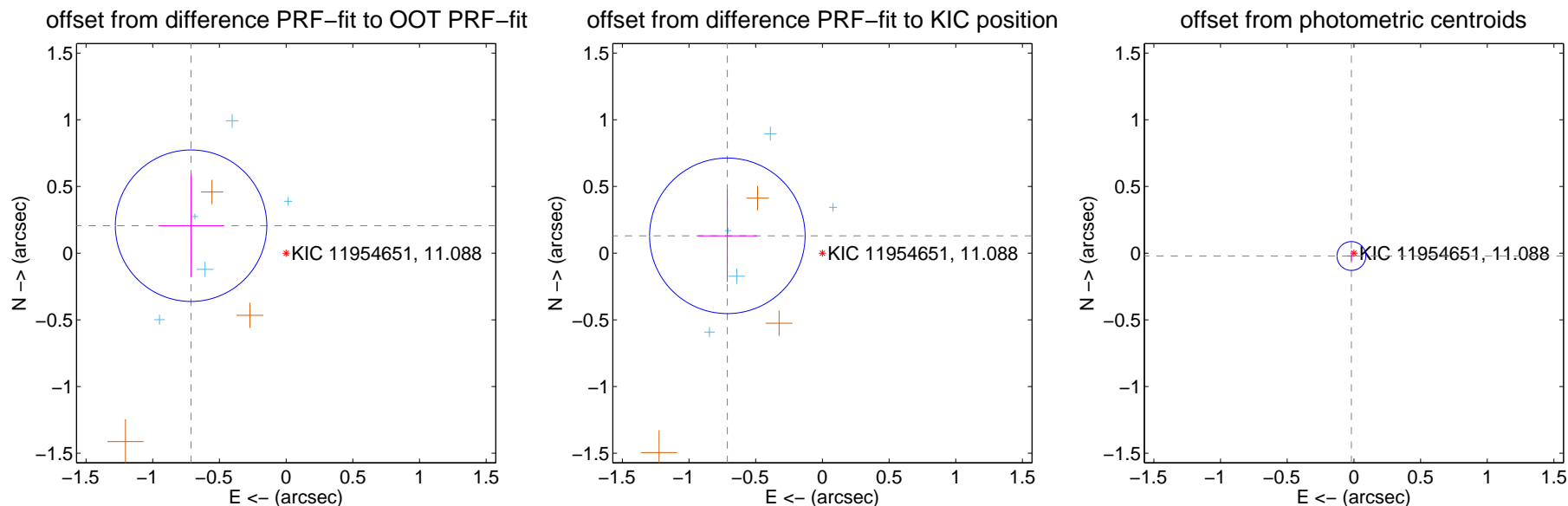
DV Centroid Data

Supplemental centroid analysis for 011954651-02. **Kepler magnitude: 11.09.** Transit SNR 14.99

There are 7 quarters with good PRF difference image offsets

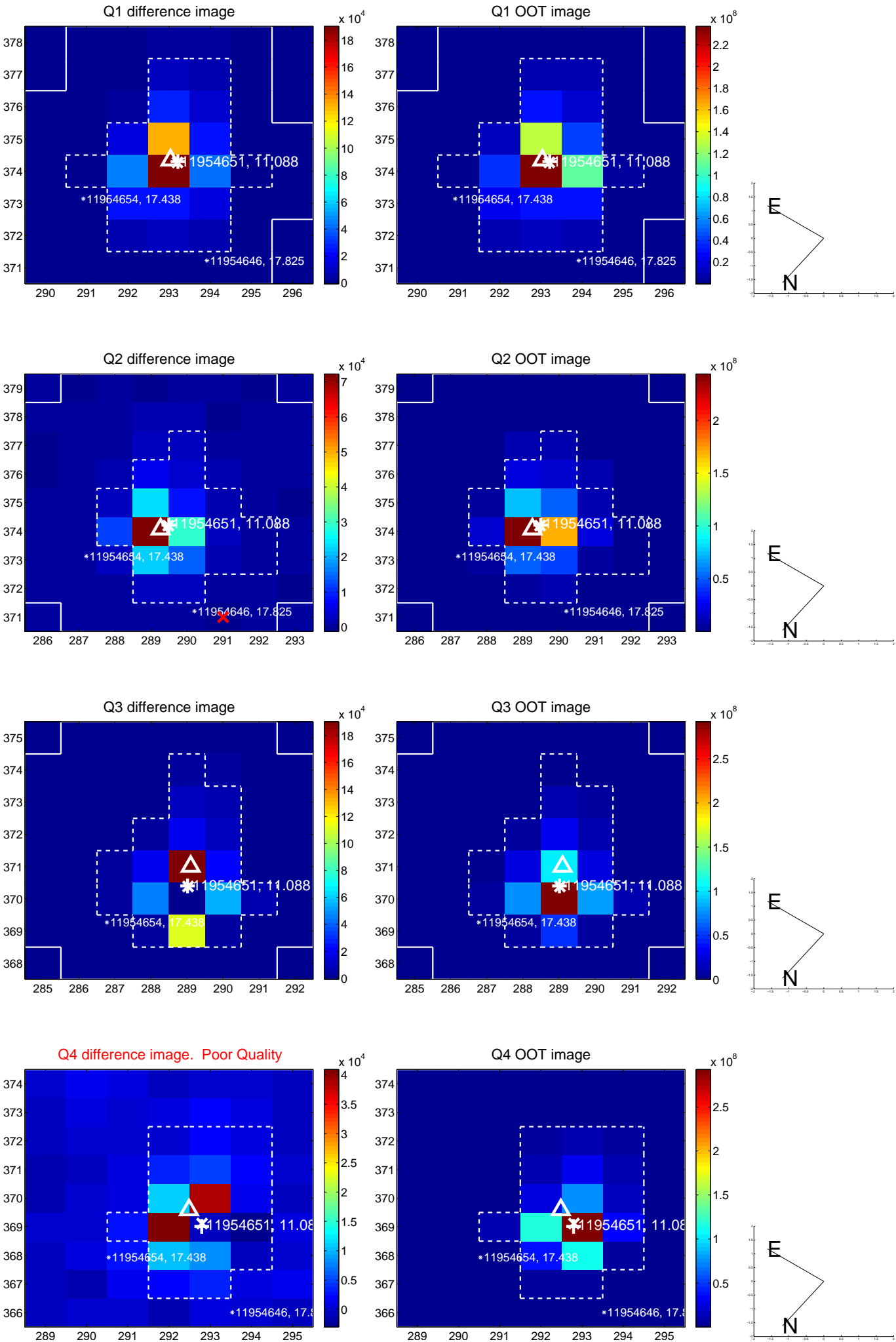
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.742 ± 0.189	3.92	0.713 ± 0.245	0.206 ± 0.378
PRF-fit source offset from KIC position	0.724 ± 0.194	3.73	0.713 ± 0.221	0.130 ± 0.346
photometric centroid source offset	0.03 ± 0.04	0.79	0.02 ± 0.03	-0.02 ± 0.04

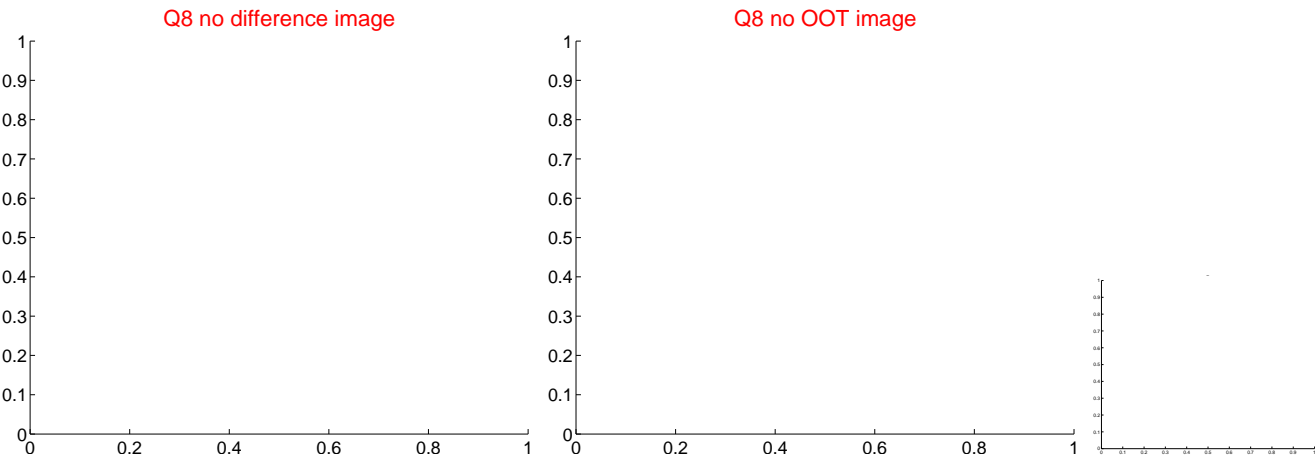
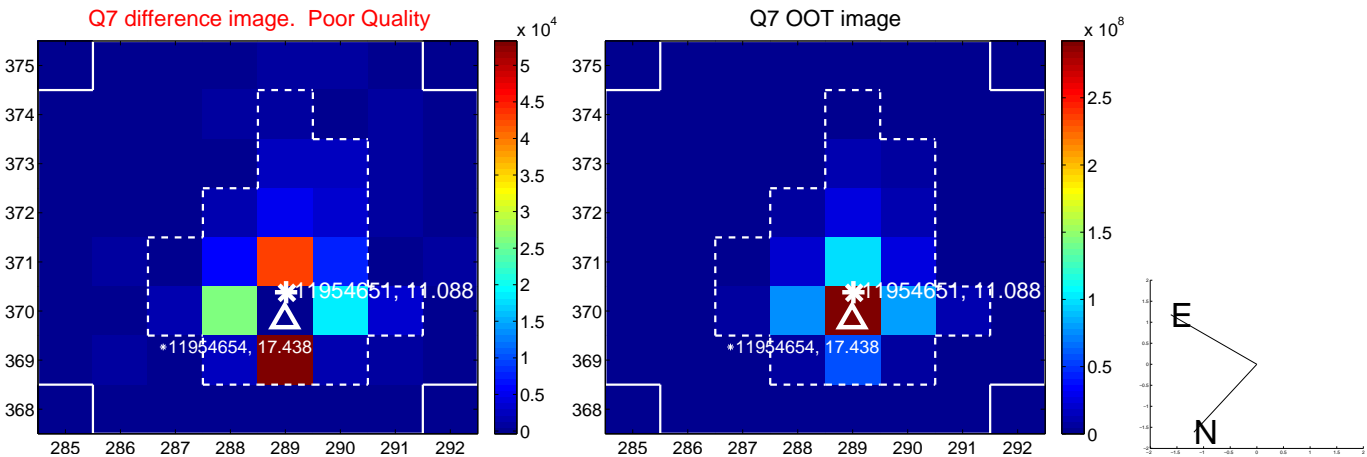
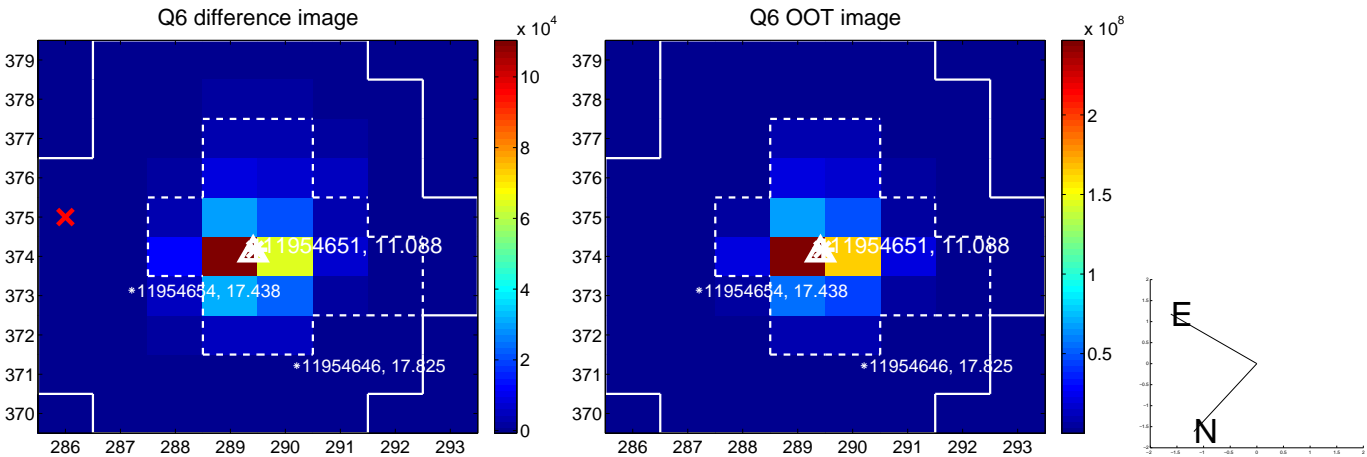
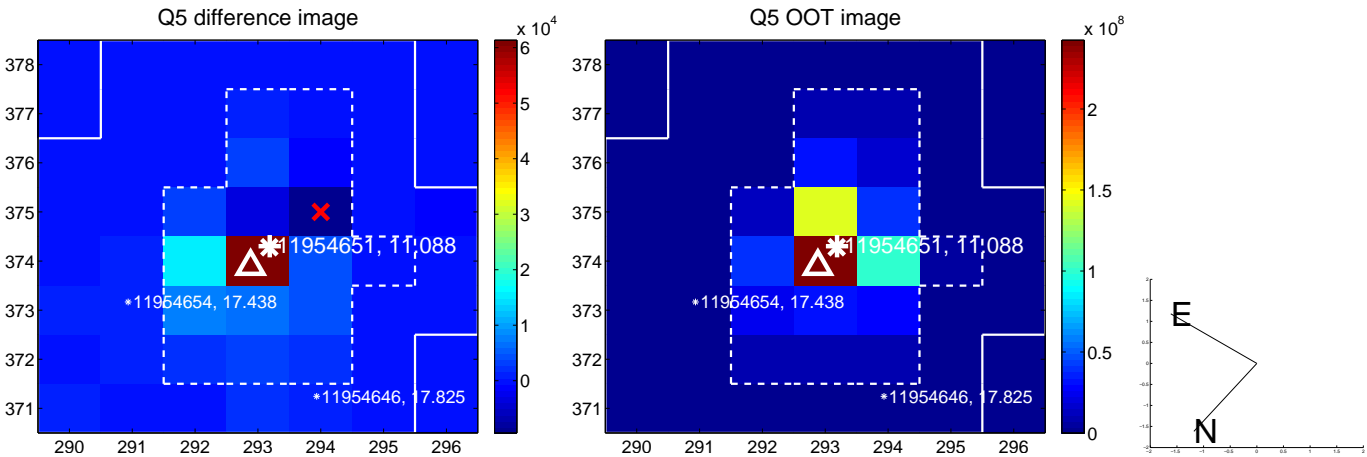


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

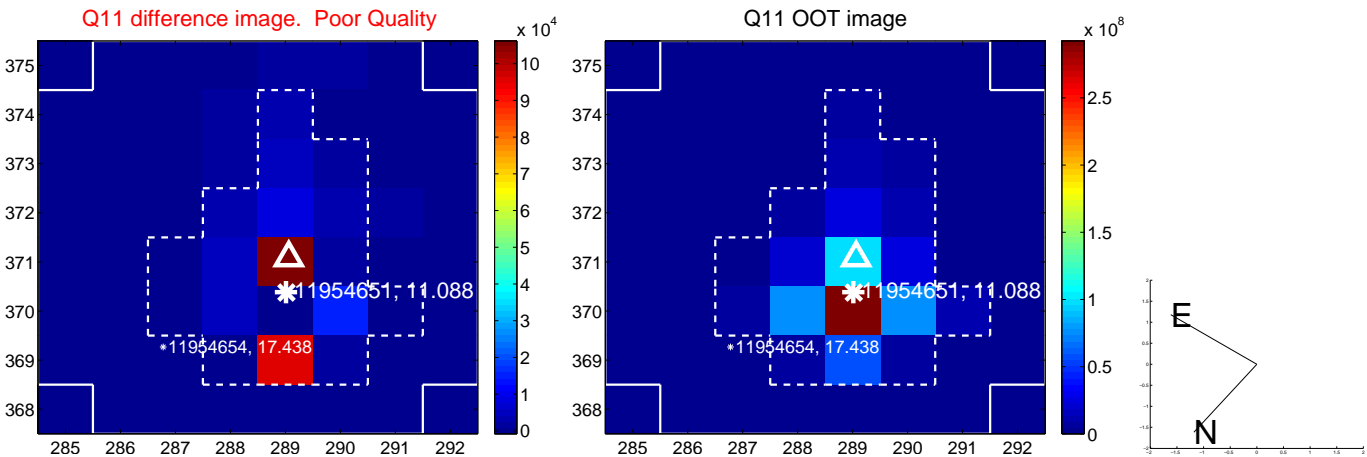
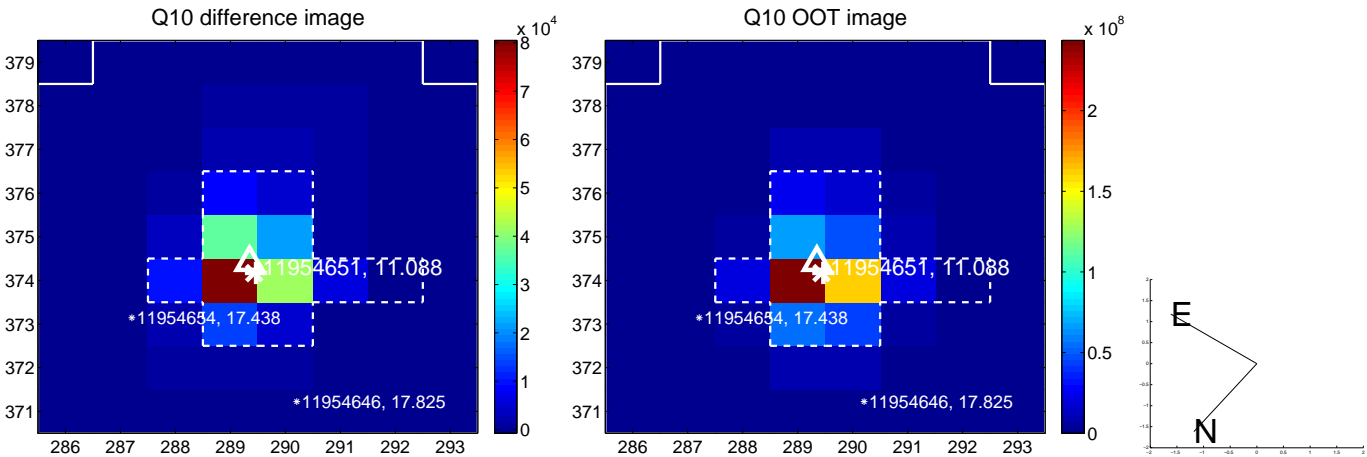
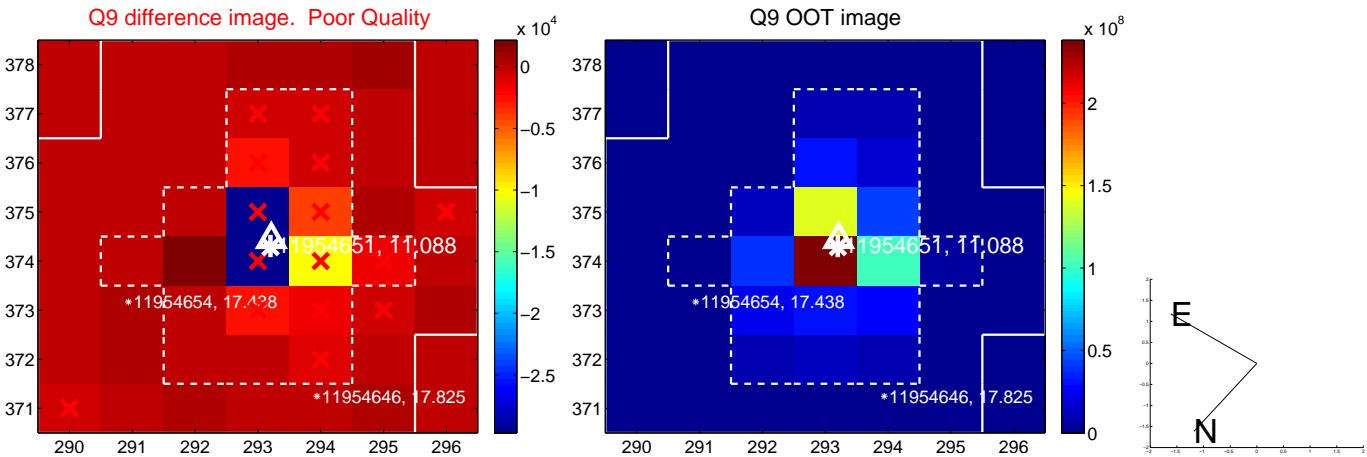
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



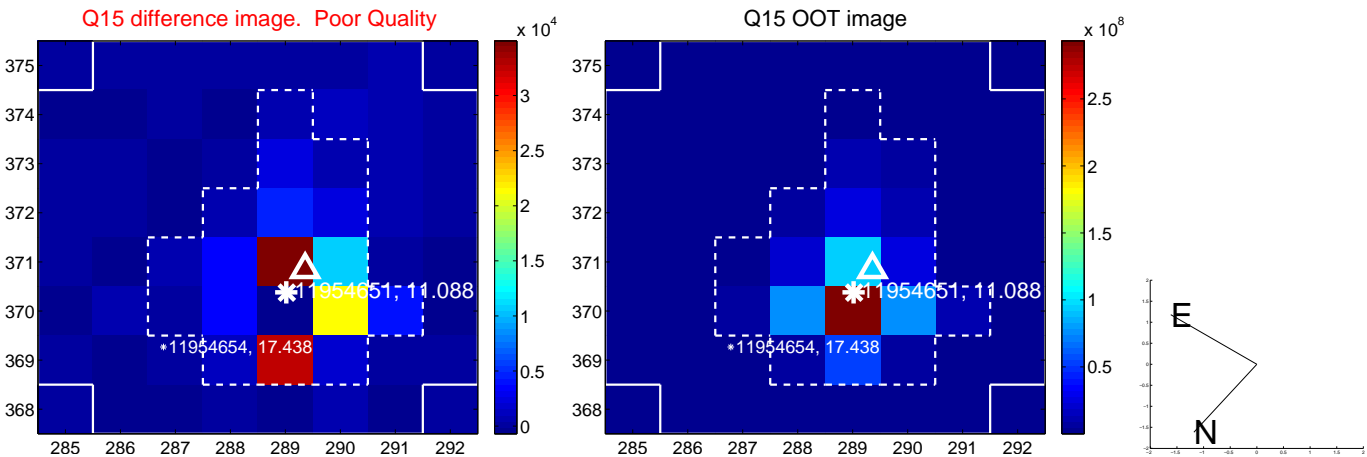
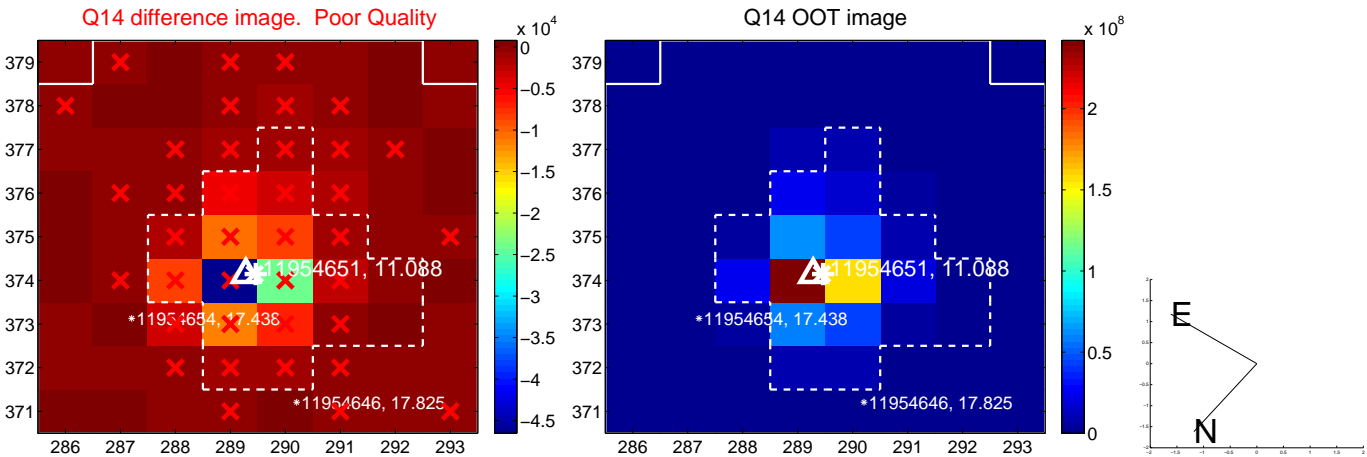
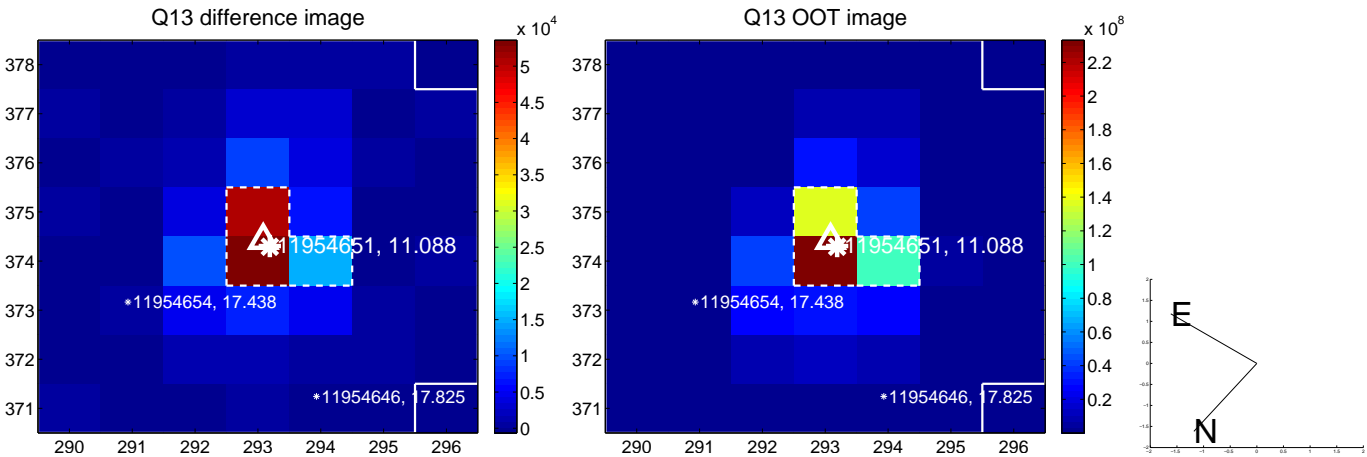
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



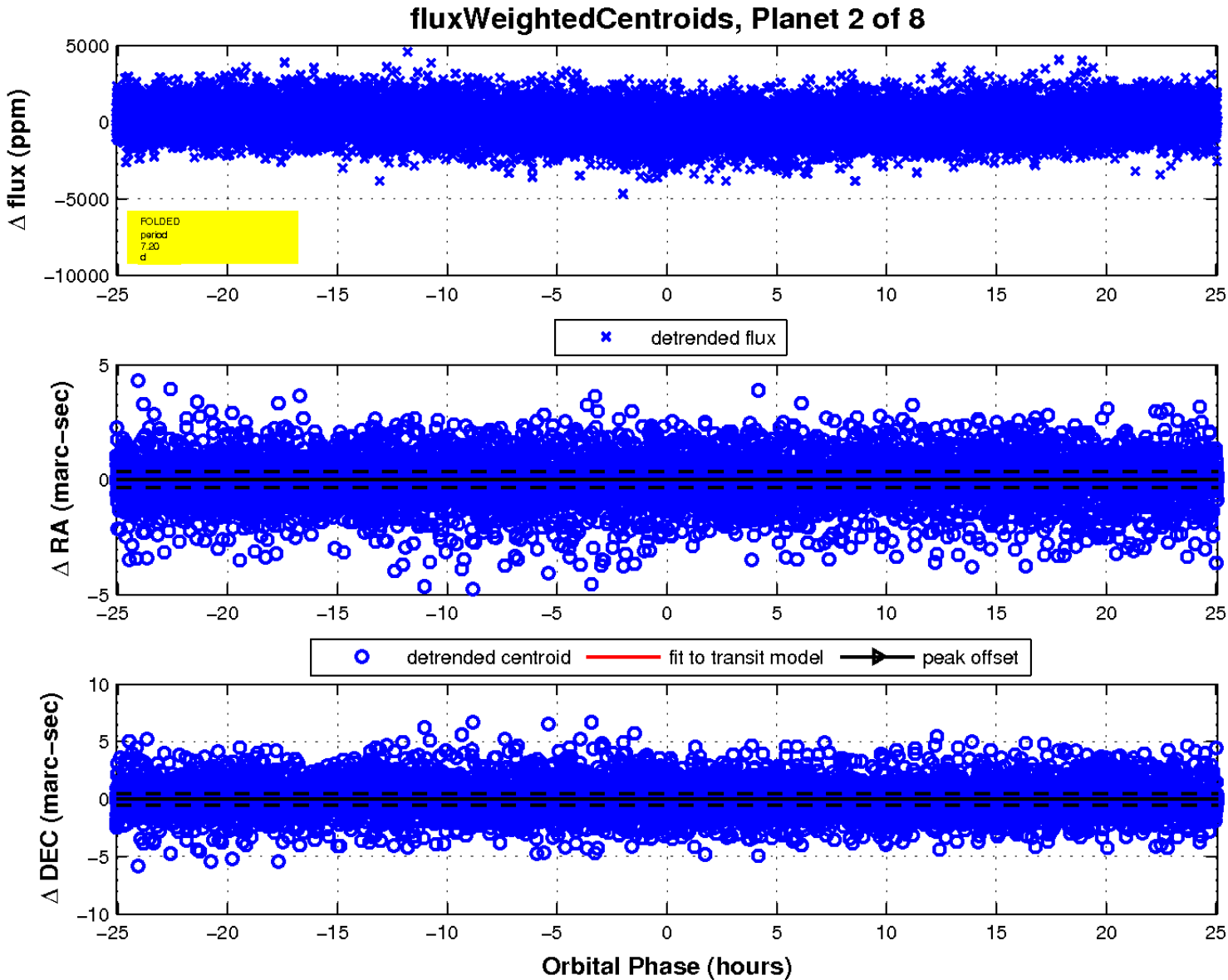
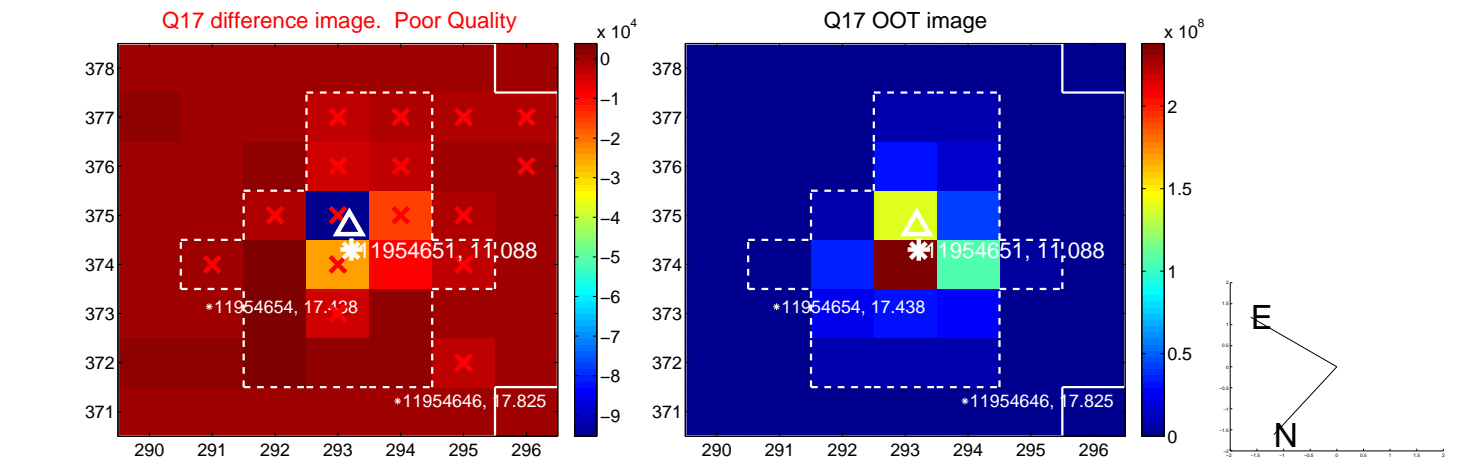
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

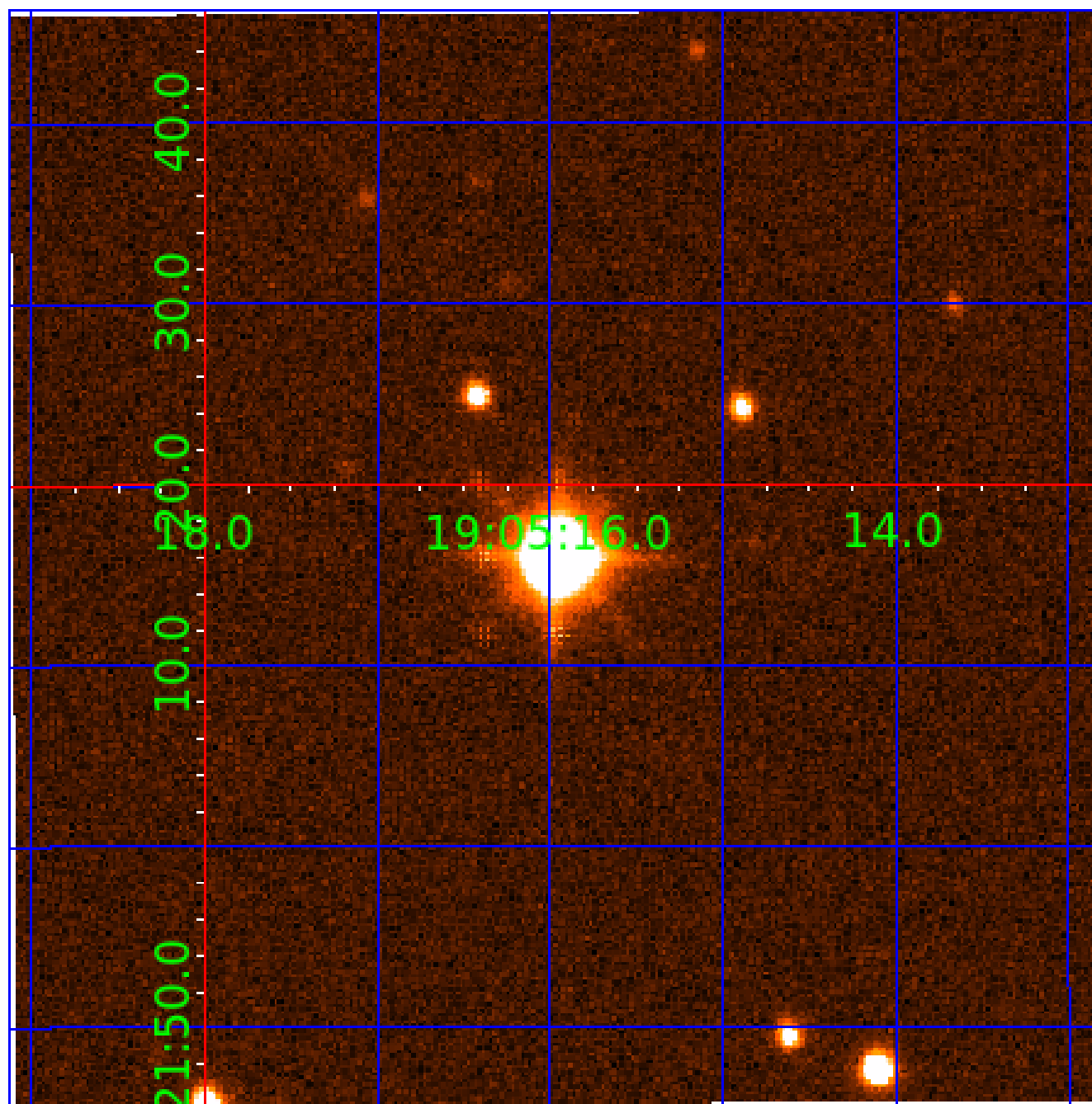


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011954651

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})
011954651-01	OBS	No	0.700292	132.024552	141.9	3.982	10.3	11.8	1.73	6810	2.39	21675.65
011954651-02	OBS	No	7.200909	133.761875	989.6	8.358	12.9	15.0	1.73	6810	10.09	969.38
011954651-03	OBS	No	7.200587	136.289486	835.7	7.495	11.9	12.9	1.73	6810	6.35	969.44
011954651-04	OBS	No	28.803844	132.031813	1159.9	3.834	8.6	8.2	1.73	6810	9.99	152.67
011954651-05	OBS	No	16.779839	137.982768	703.6	5.791	7.9	8.2	1.73	6810	4.92	313.78
011954651-06	OBS	No	50.409778	173.913015	913.5	3.079	7.7	7.8	1.73	6810	5.88	72.39
011954651-07	OBS	No	41.948088	150.285561	1818.2	2.615	8.2	8.1	1.73	6810	8.28	92.48
011954651-08	OBS	No	51.694463	159.140573	59.9	6.000	7.8	-1.0	1.73	6810	1.35	70.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

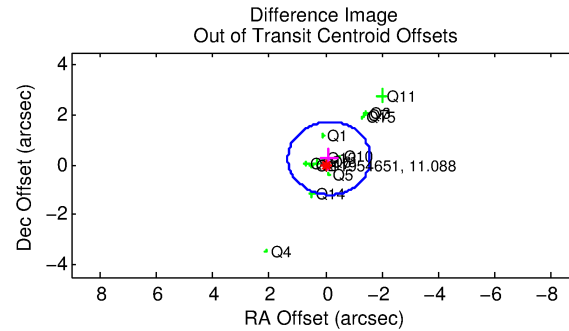
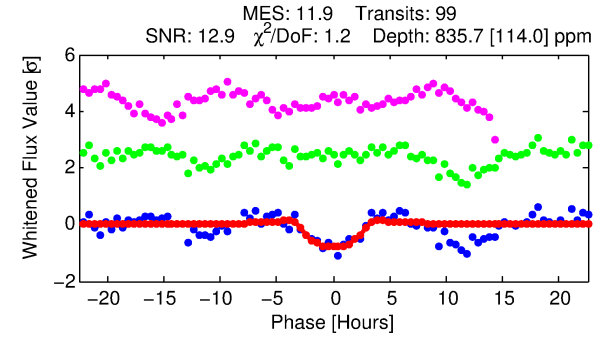
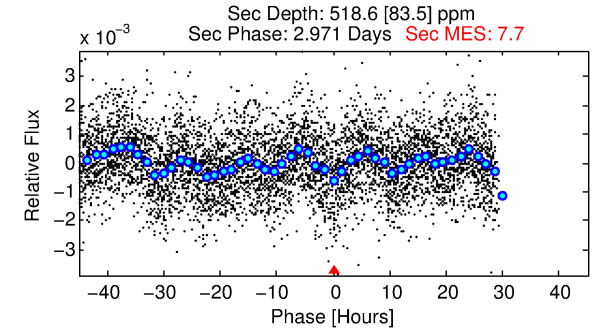
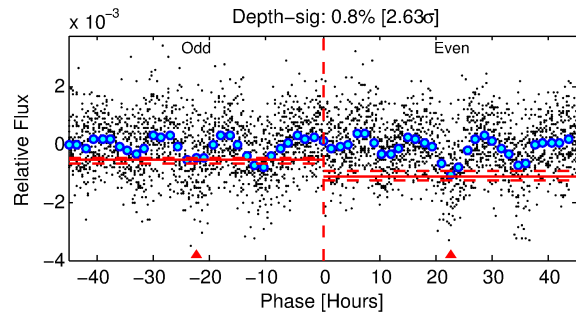
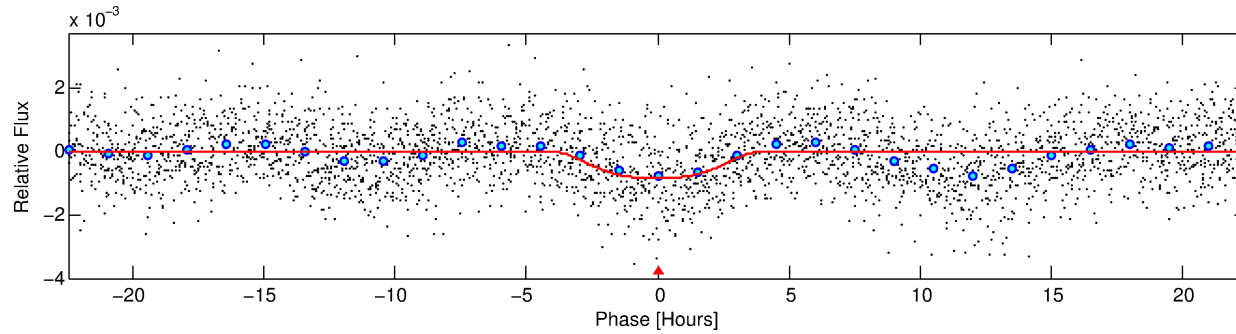
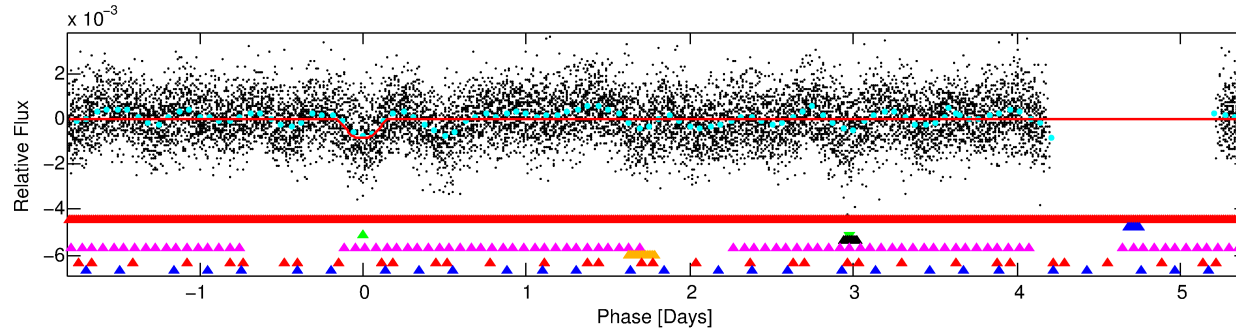
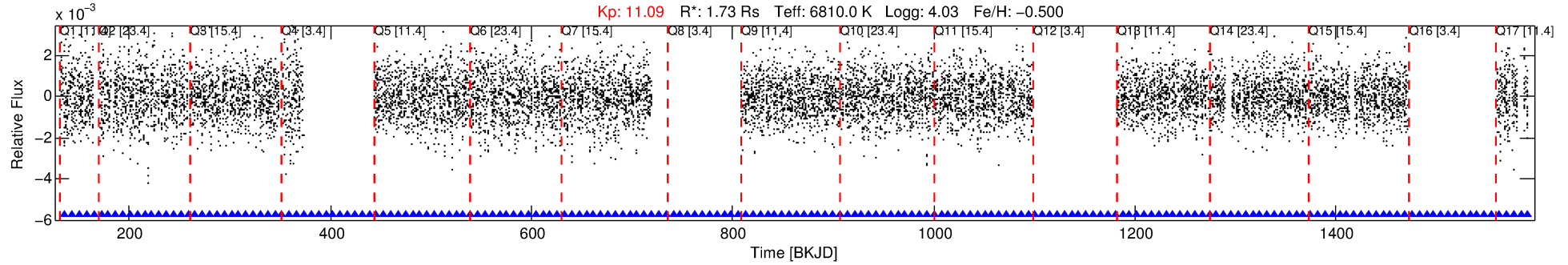
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-03

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 3 of 8 Period: 7.201 d



DV Fit Results:

Period = 7.20059 [0.00012] d
Epoch = 136.2895 [0.0140] BKJD
 $R_p/R^* = 0.0337$ [0.0032]
 $a/R^* = 2.88$ [0.33]
 $b = 0.97$ [0.01]
 $S_{\text{eff}} = 969.44$ [520.06]
 $T_{\text{eq}} = 1423$ [191] K
 $R_p = 6.35$ [2.19] R_e
 $a = 0.0770$ [0.0246] AU
 $A_g = 41.96$ [23.78] [1.72 σ]
 $T_{\text{eff}} = 5599$ [419] K [9.07 σ]

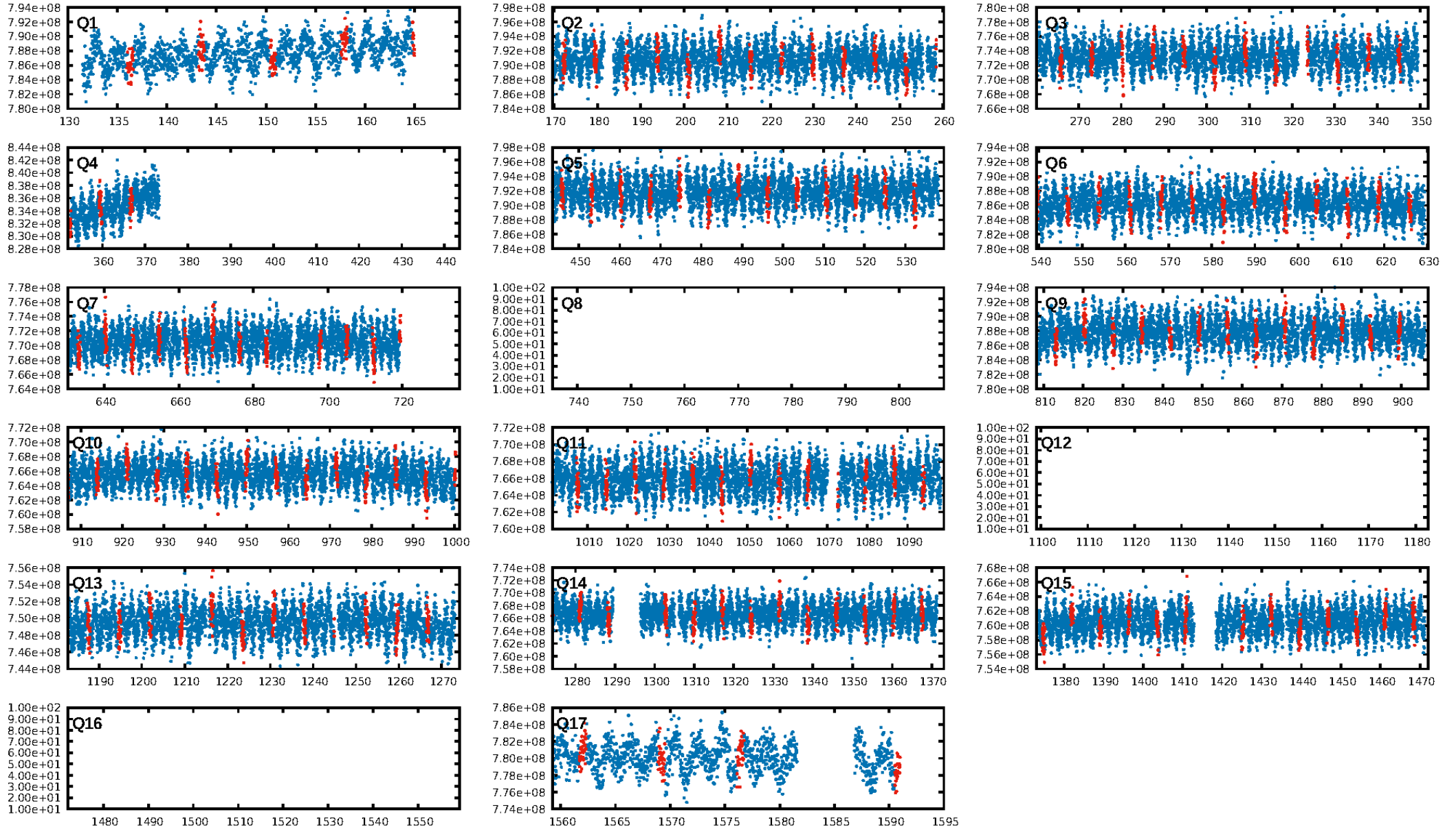
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.38 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [94/94]
GhostDiagnostic-chr: 0.221
Centroid-sig: 5.4%
Centroid-so: 0.107 arcsec [2.52 σ]
OotOffset-rm: 0.284 arcsec [0.58 σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-rm: 0.232 arcsec [0.52 σ]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/14]

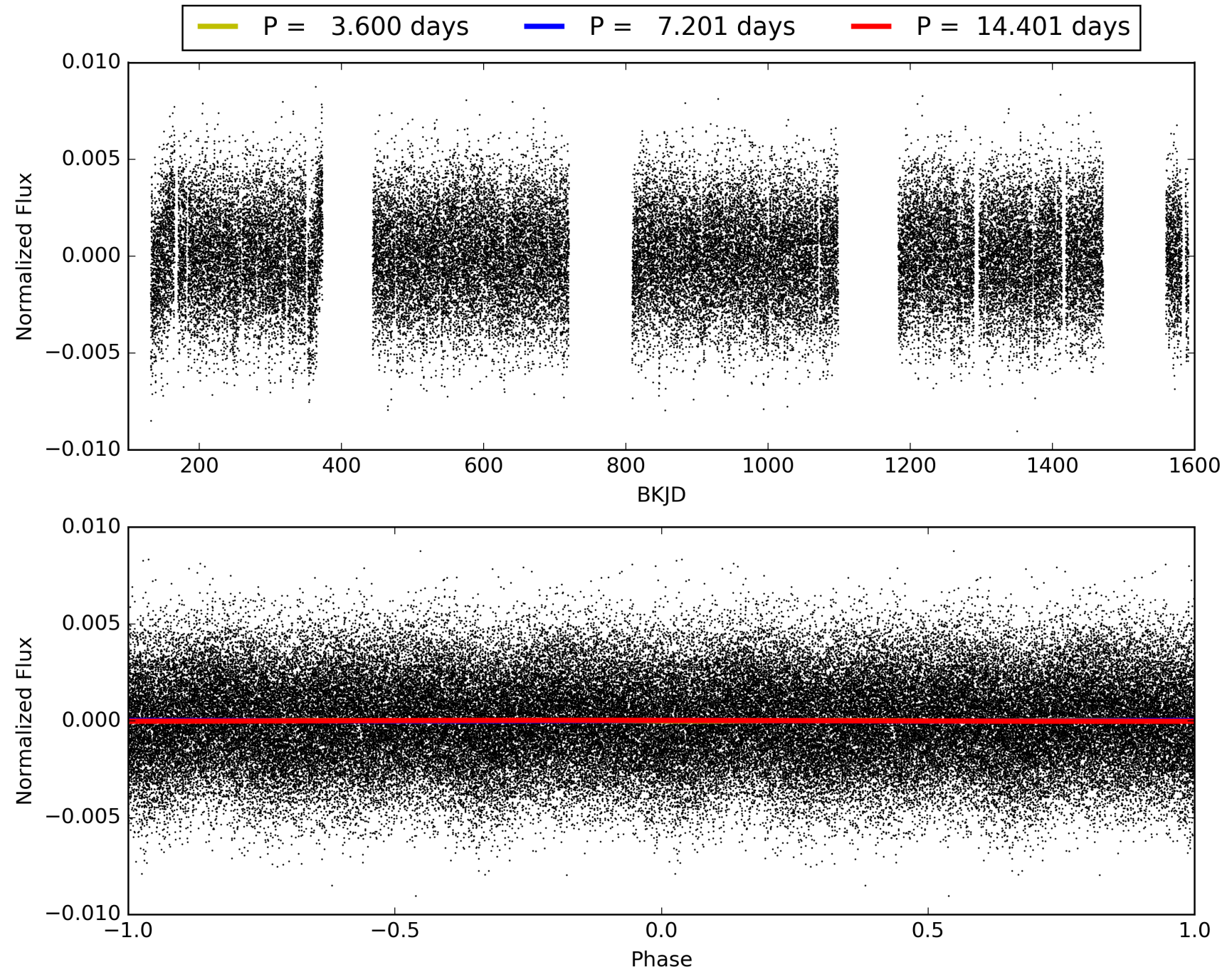
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:18:17 Z

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

TCE 011954651-03, PDC Light Curves

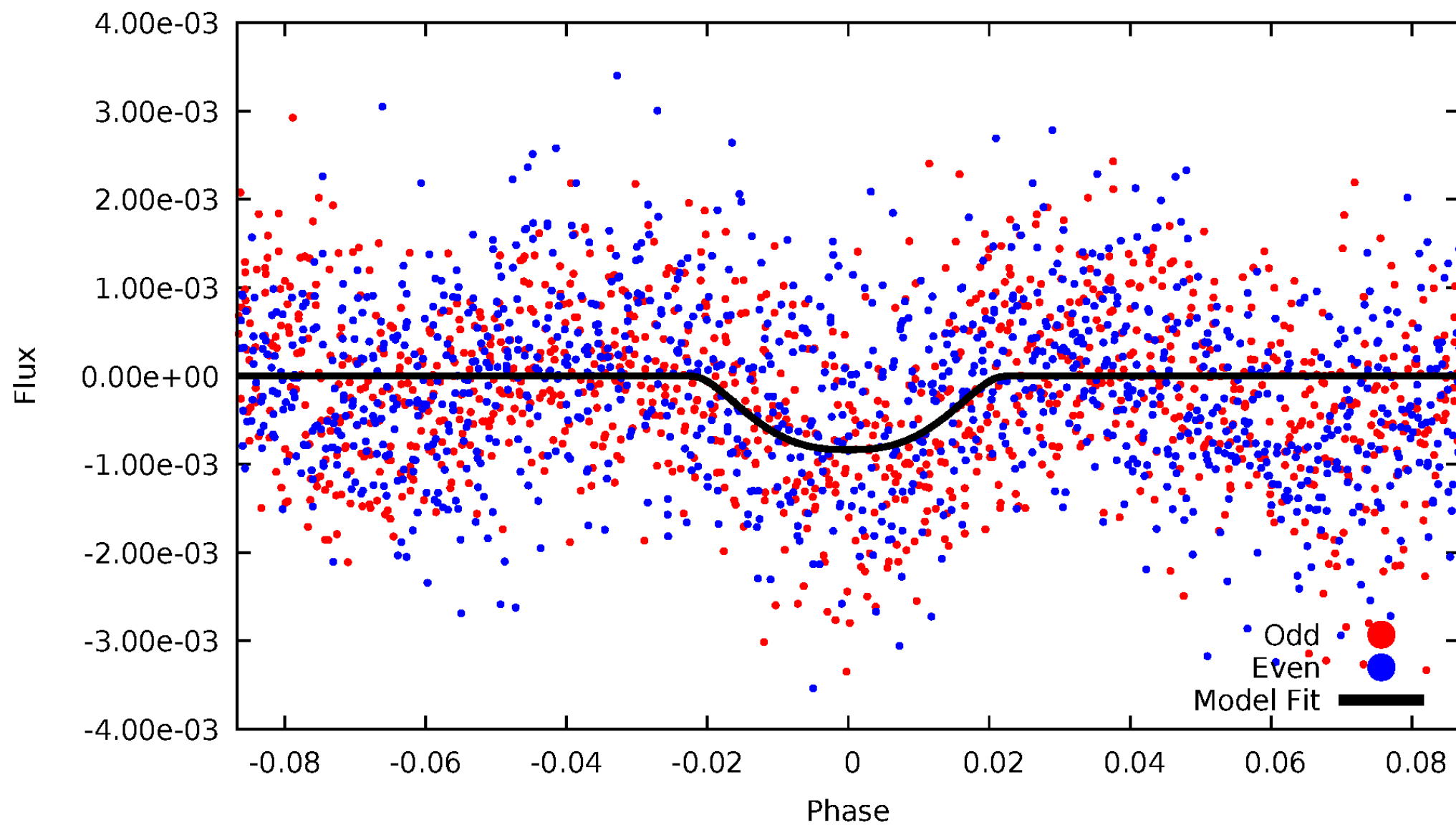


TCE 011954651-03



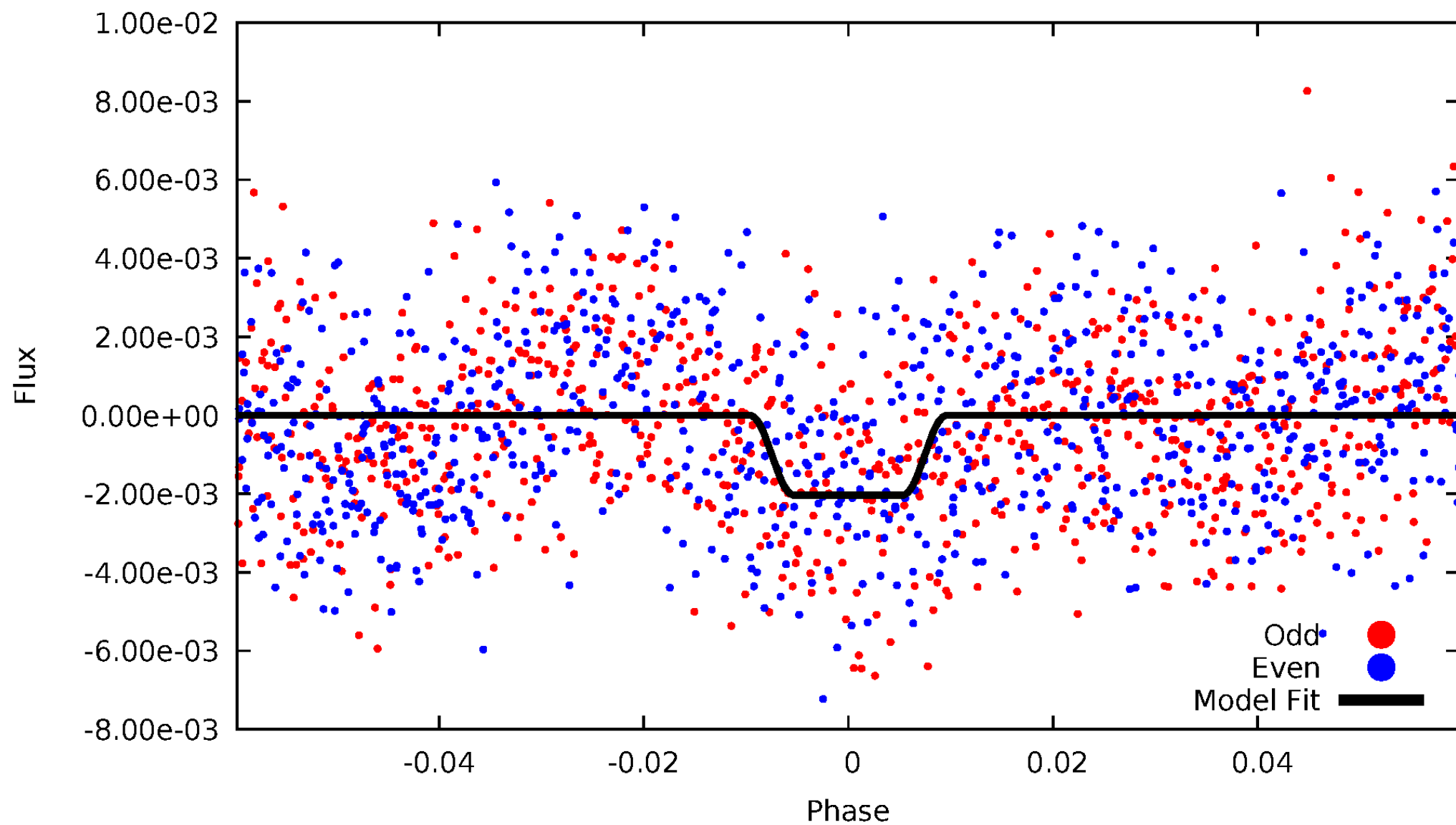
DV Odd/Even

TCE 011954651-03



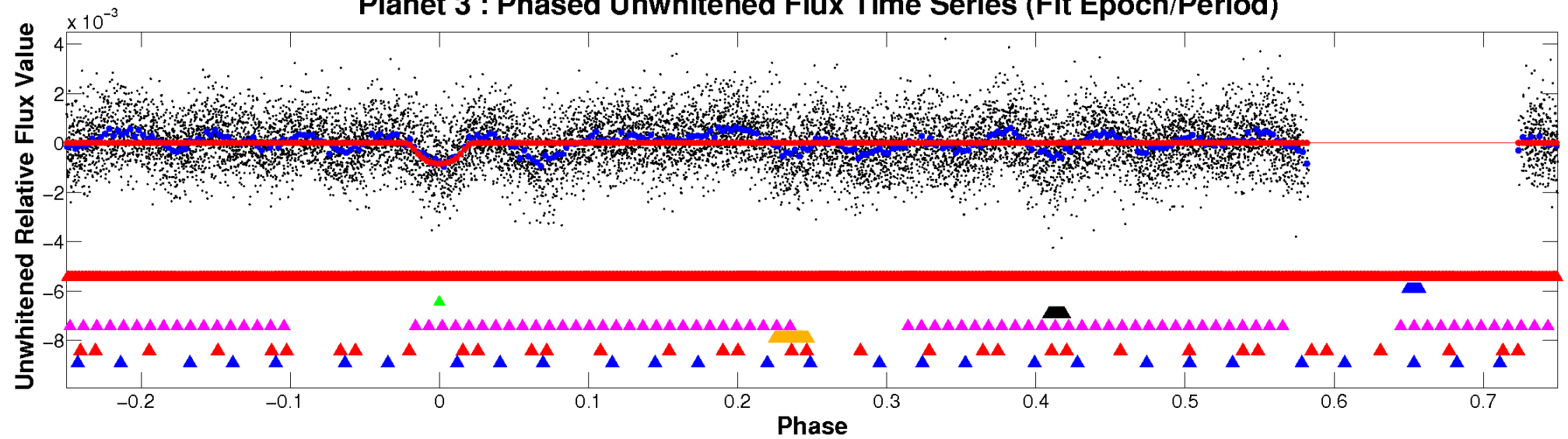
ALT Odd/Even

TCE 011954651-03

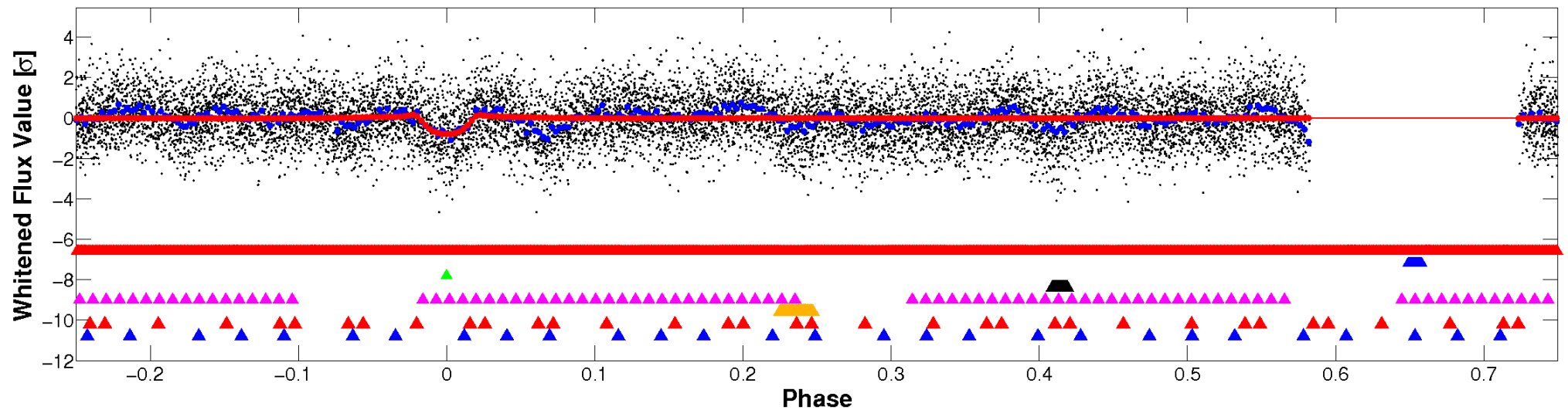


Non-Whitened Vs. Whitened Light Curve

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

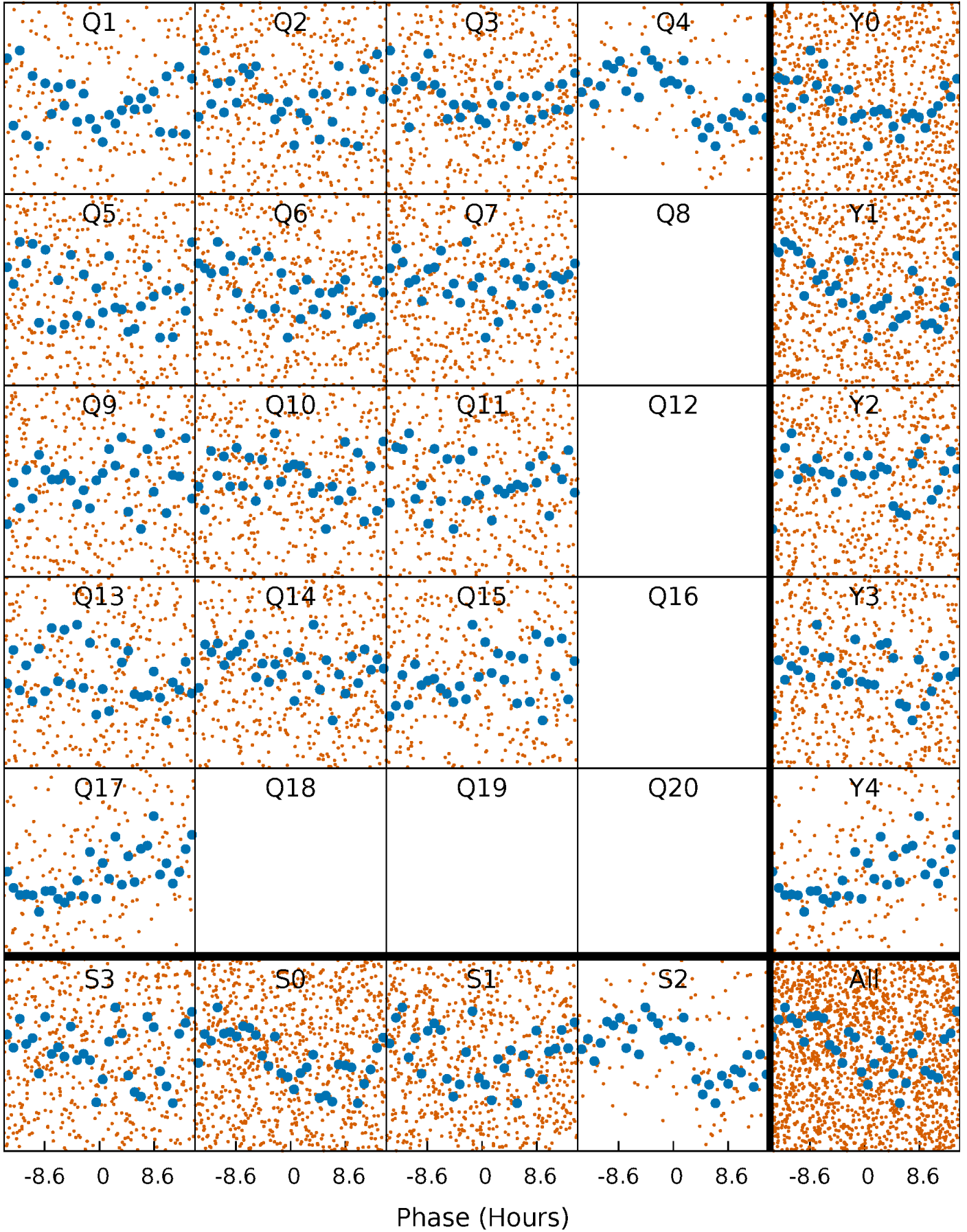


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



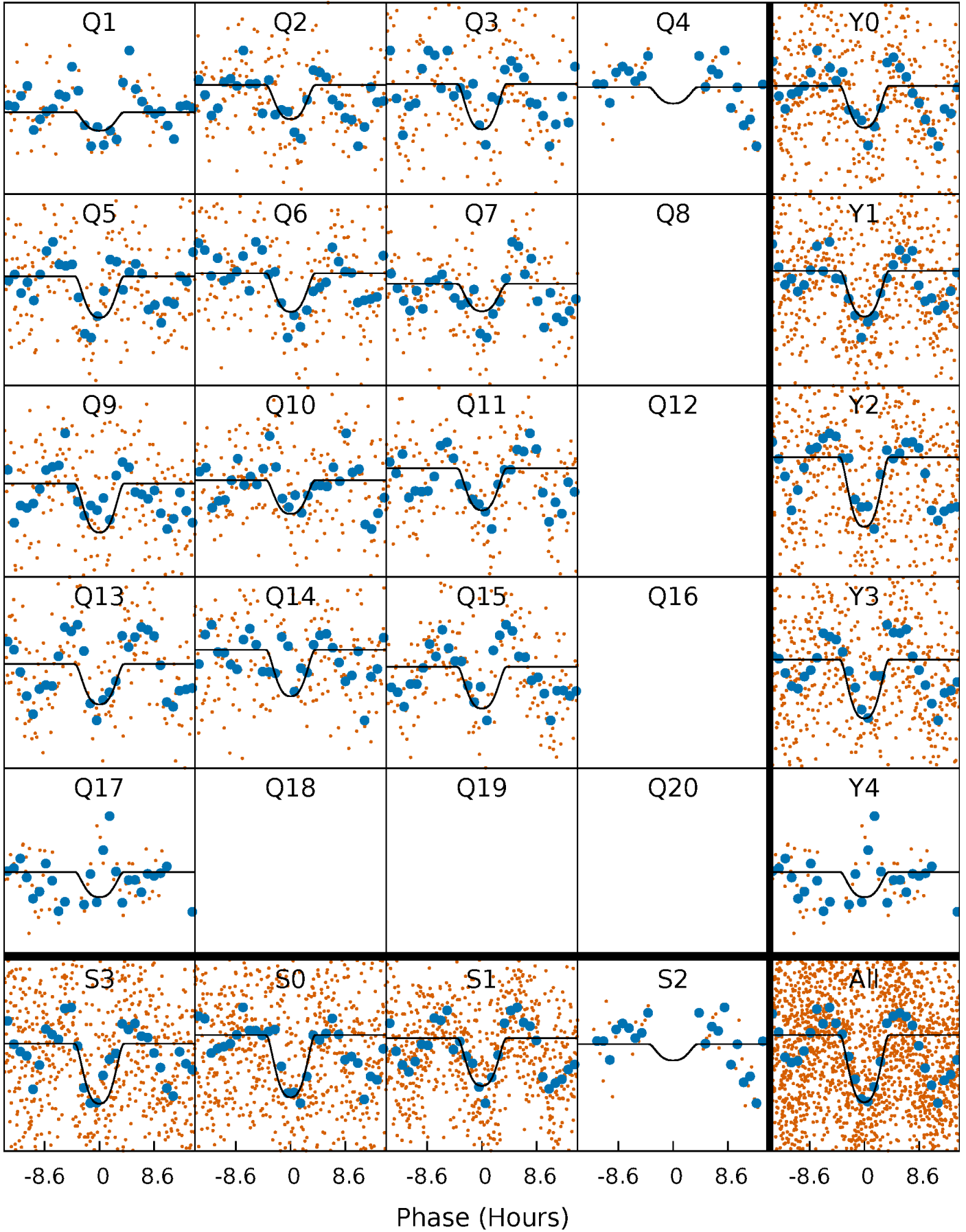
PDC Quarter-Phased Transit Curves

TCE 011954651-03 P= 7.200587 Days $T_0=136.289486$ (BKJD)



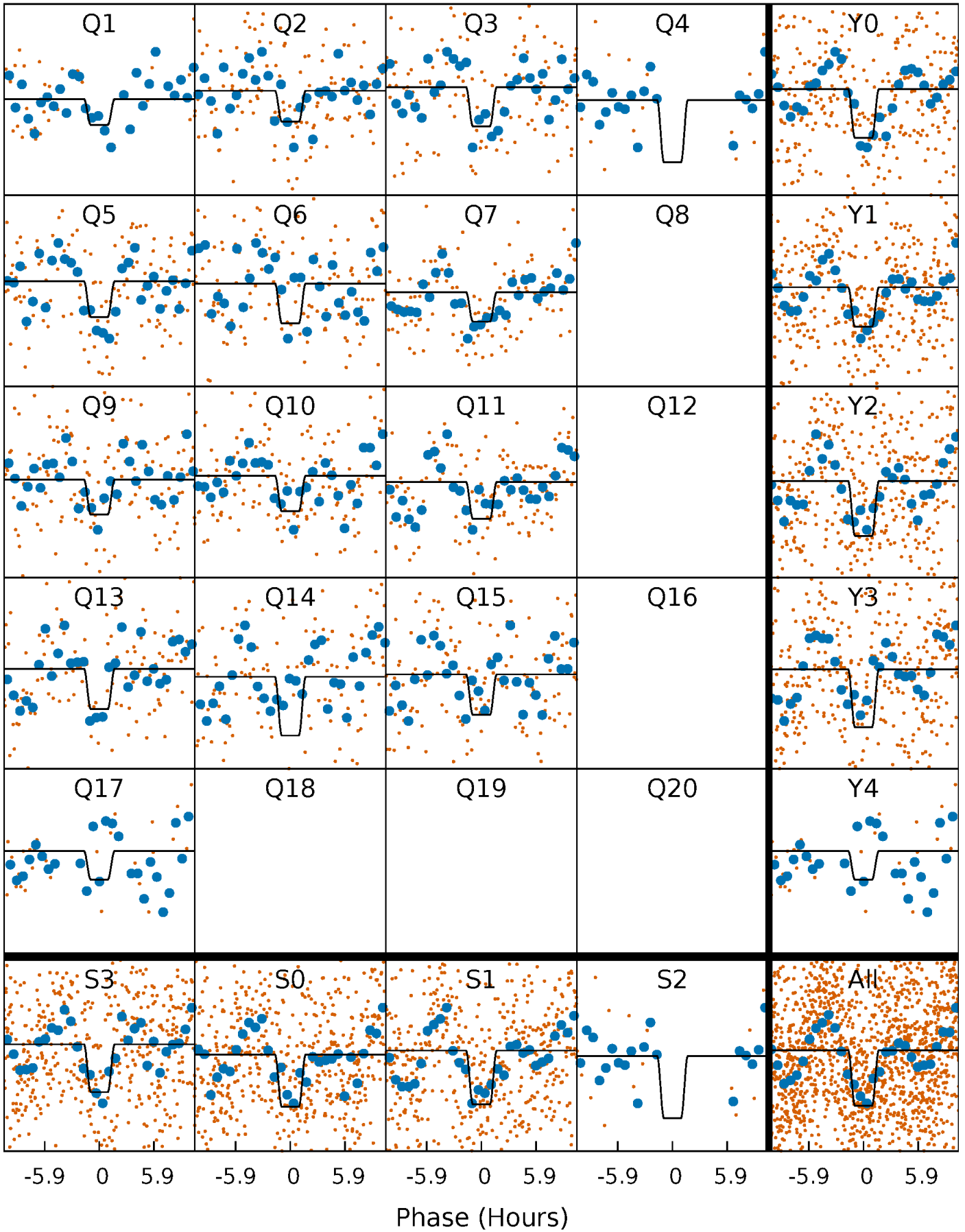
DV Quarter-Phased Transit Curves

TCE 011954651-03 P= 7.200587 Days $T_0=136.289486$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

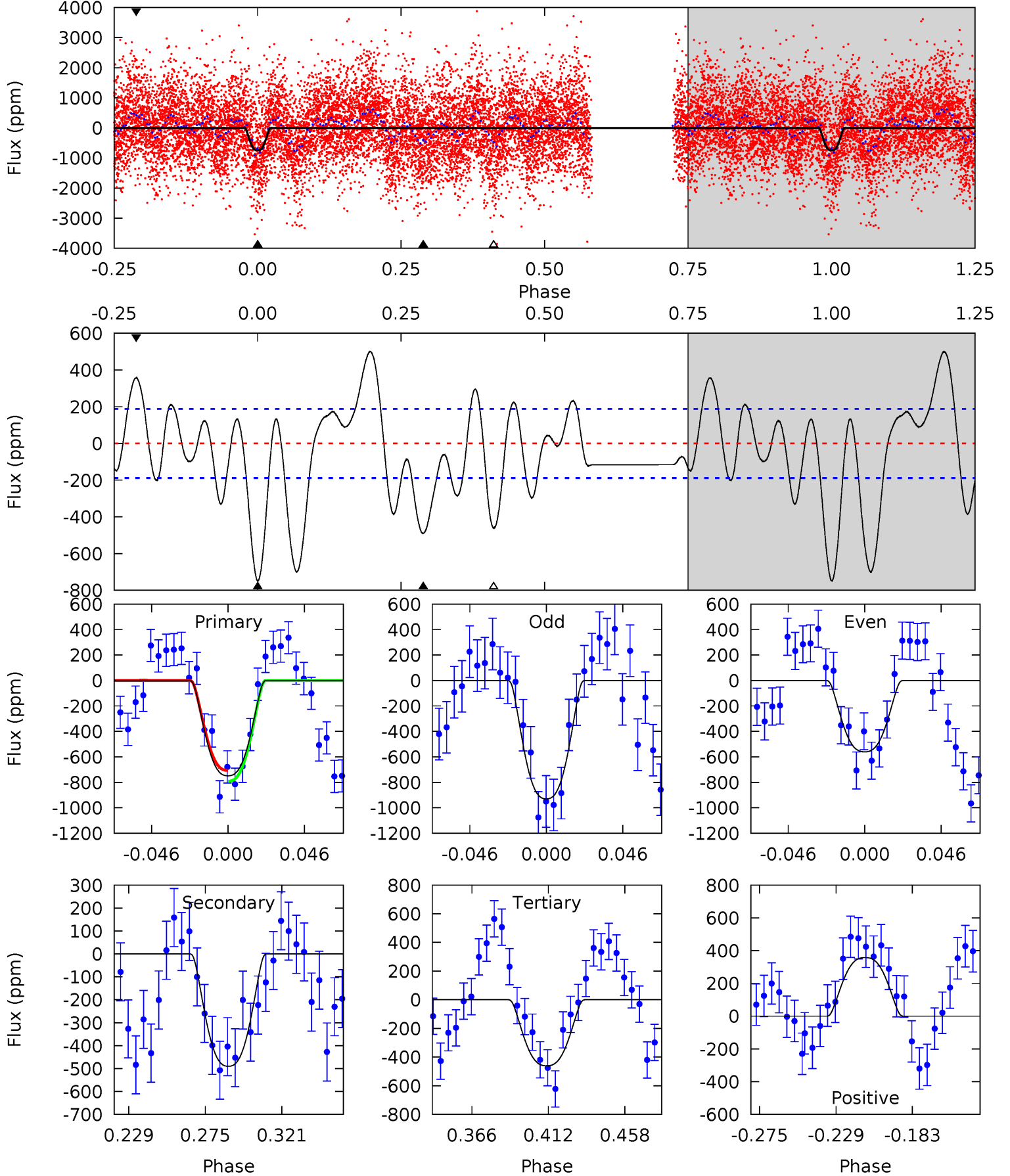
TCE 011954651-03 P= 7.200847 Days $T_0=136.191379$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-03, P = 7.200587 Days, E = 129.088899 Days

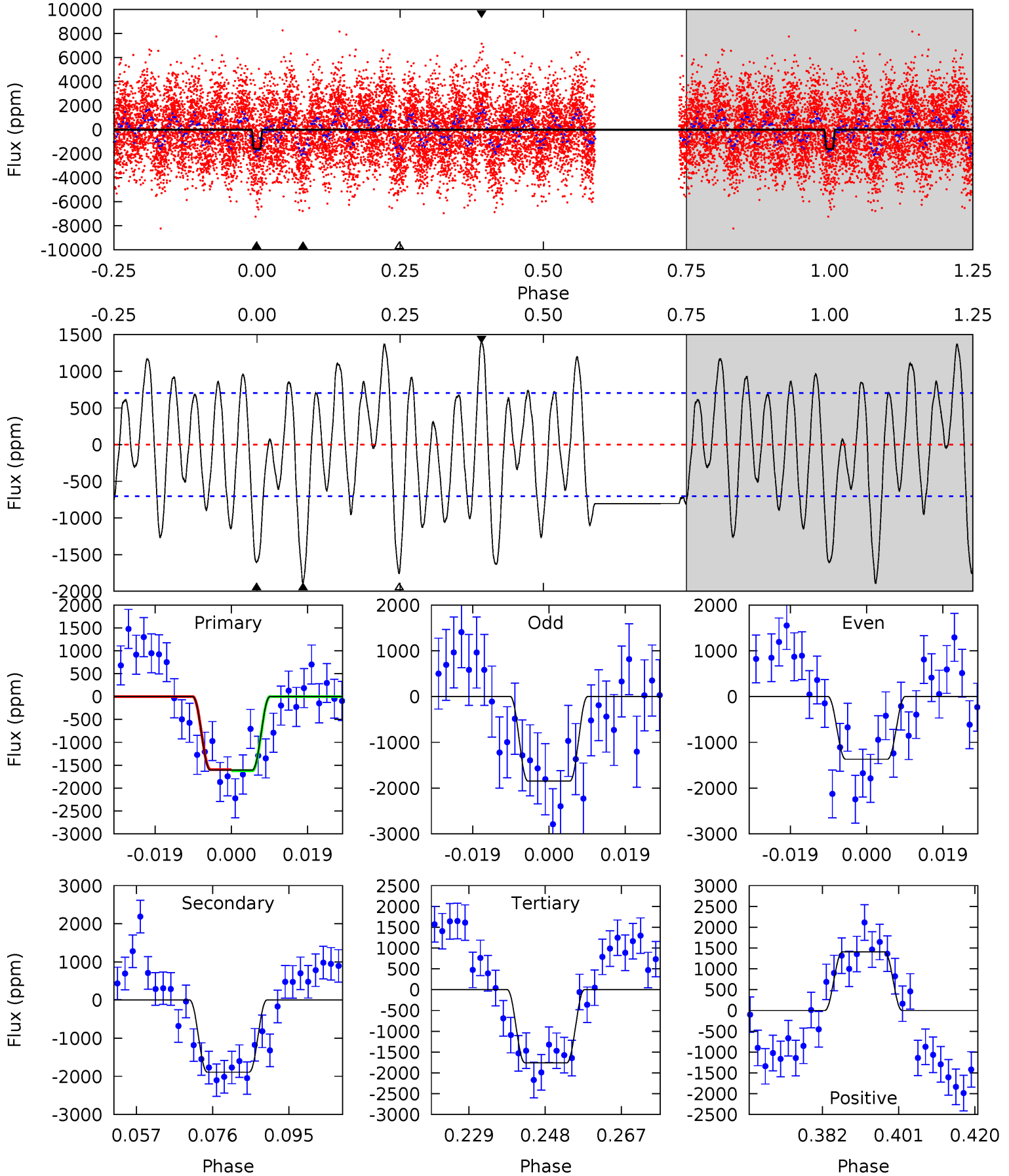
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	12.3	11.6	8.99	4.73	2.00	6.02	7.23	9.83	0.73	3.33	4.68	0.71	0.40	1.06



Alt Model-Shift Uniqueness Test

011954651-03, P = 7.200847 Days, E = 128.990532 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	13.2	12.2	9.79	4.90	2.34	4.95	-1.04	1.39	0.92	3.36	1.67	0.83	0.43	0.09



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-490 ± 40	$6.16^{+1.25}_{-1.23}$	1959^{+161}_{-178}	5492^{+320}_{-280}	42^{+22}_{-12}
Alt.	-1889 ± 144	$8.36^{+1.61}_{-1.64}$	1965^{+171}_{-206}	6652^{+390}_{-372}	89^{+46}_{-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 $A_{\text{obs}} \gg 1.0$

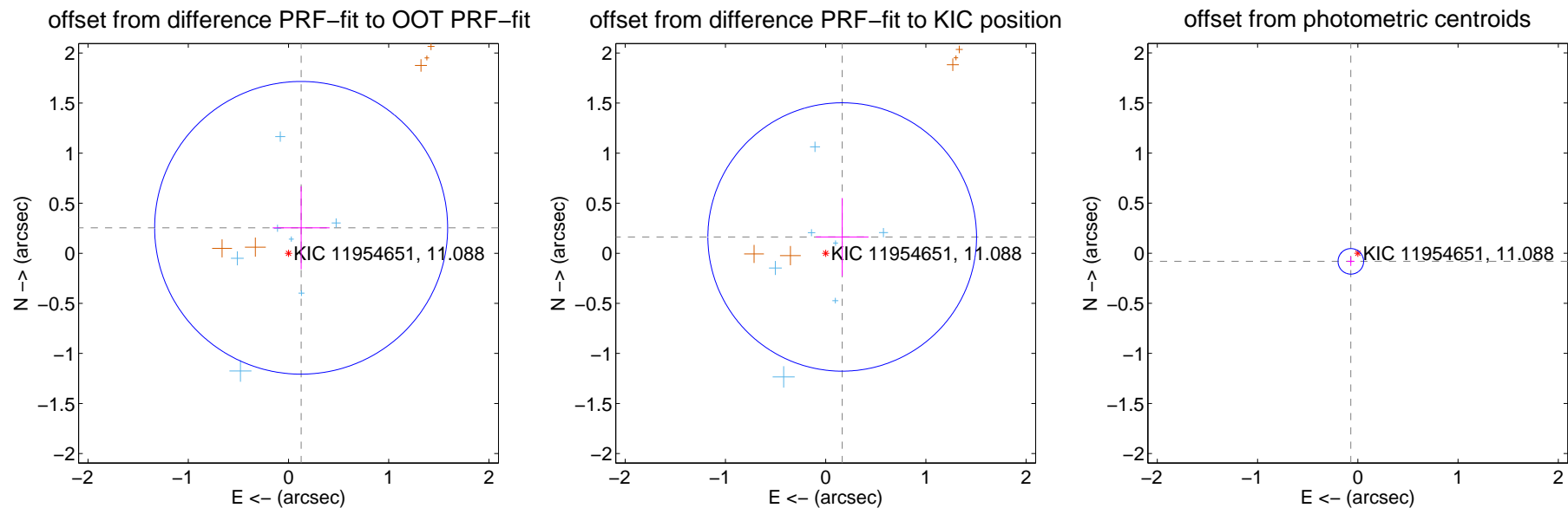
DV Centroid Data

Supplemental centroid analysis for 011954651-03. **Kepler magnitude: 11.09.** Transit SNR 12.93

There are 7 quarters with good PRF difference image offsets

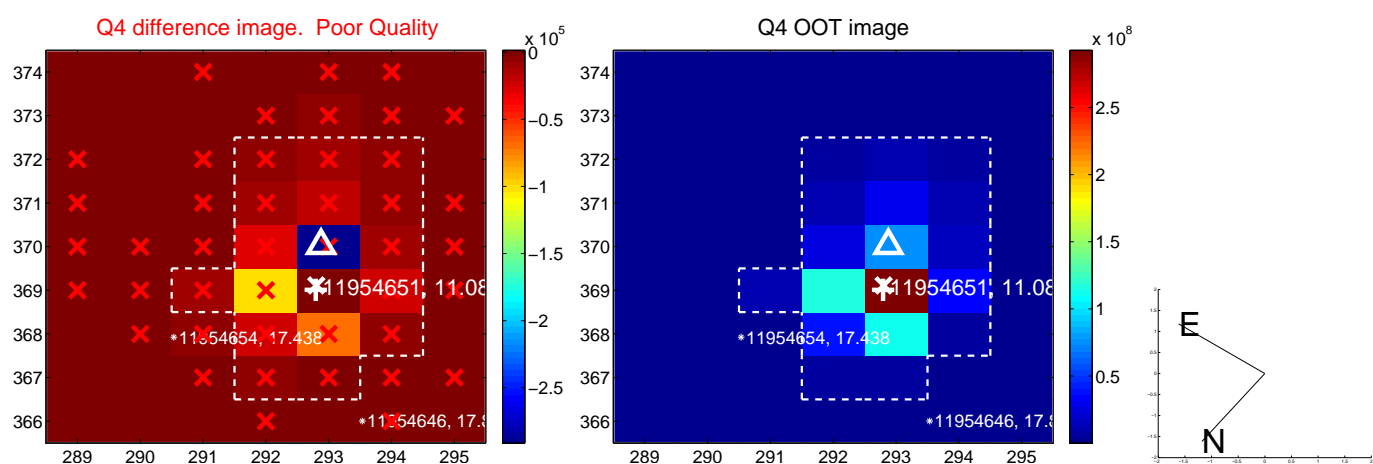
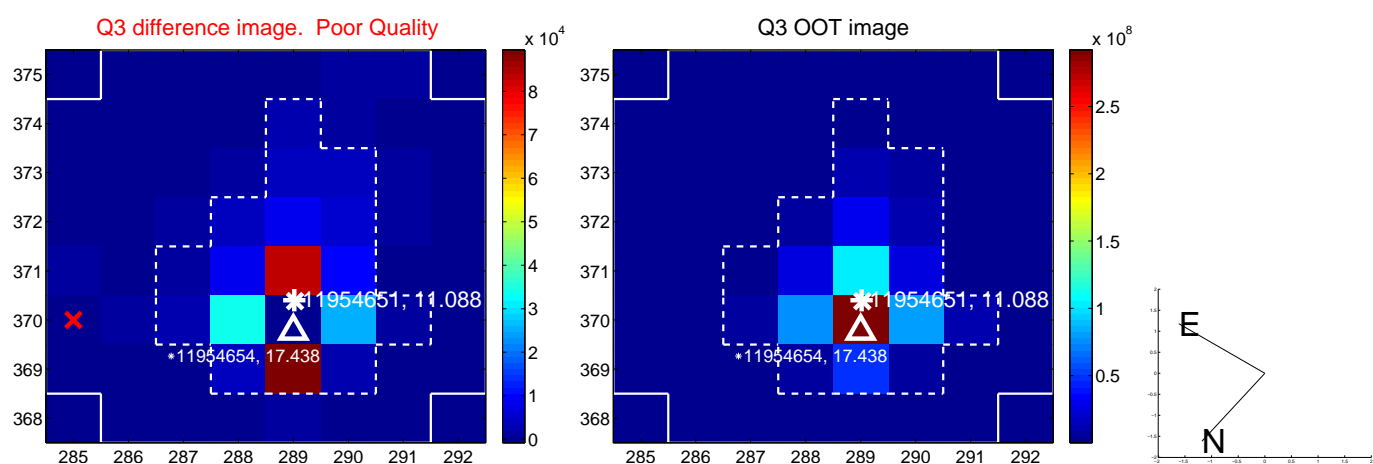
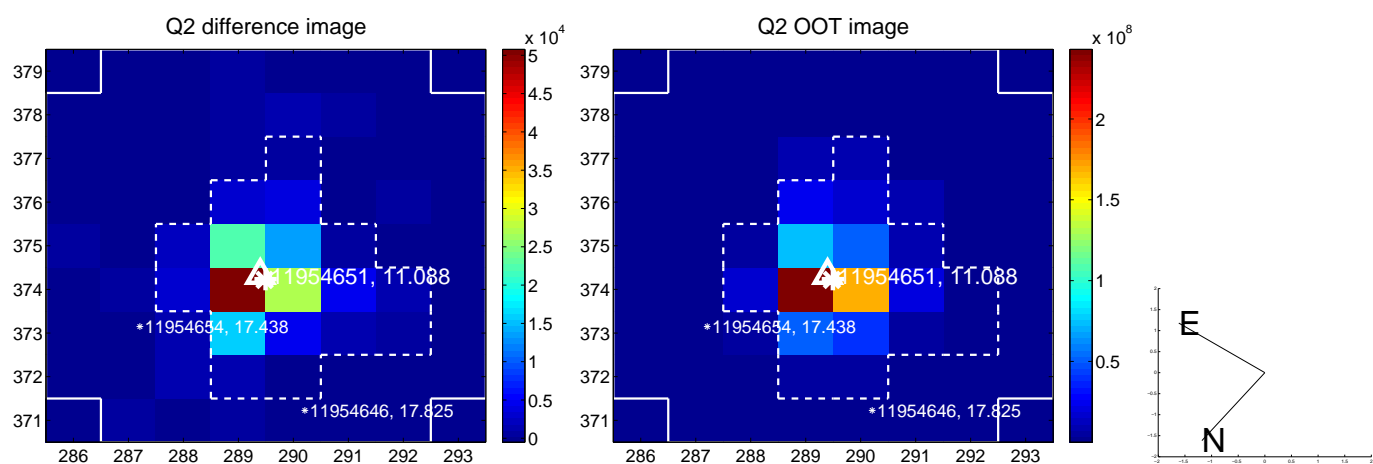
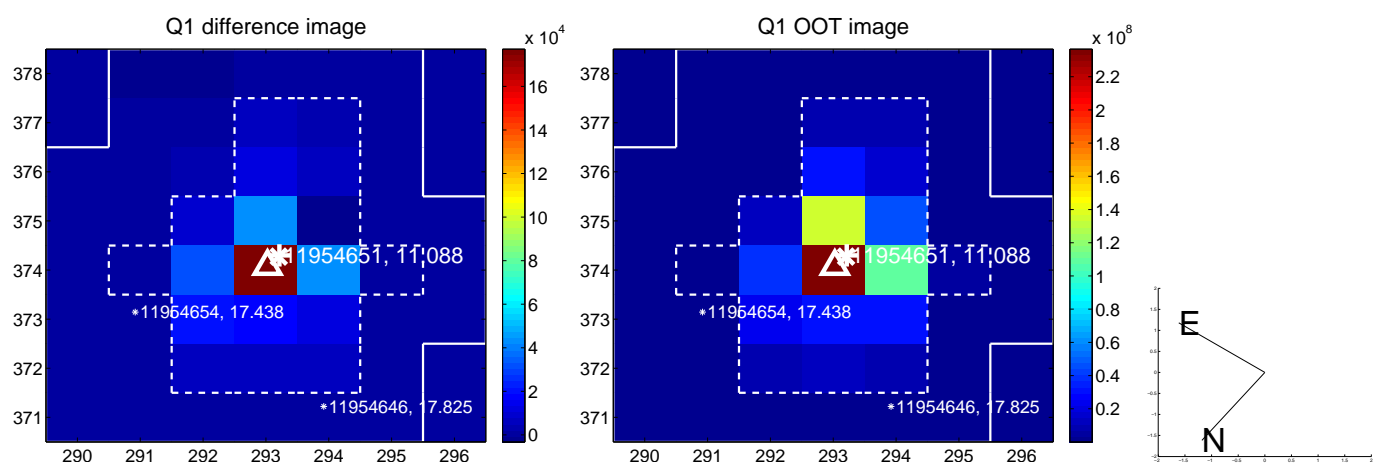
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.284 ± 0.487	0.58	-0.126 ± 0.284	0.254 ± 0.414
PRF-fit source offset from KIC position	0.232 ± 0.447	0.52	-0.165 ± 0.263	0.163 ± 0.389
photometric centroid source offset	0.11 ± 0.04	2.52	0.07 ± 0.04	-0.08 ± 0.05

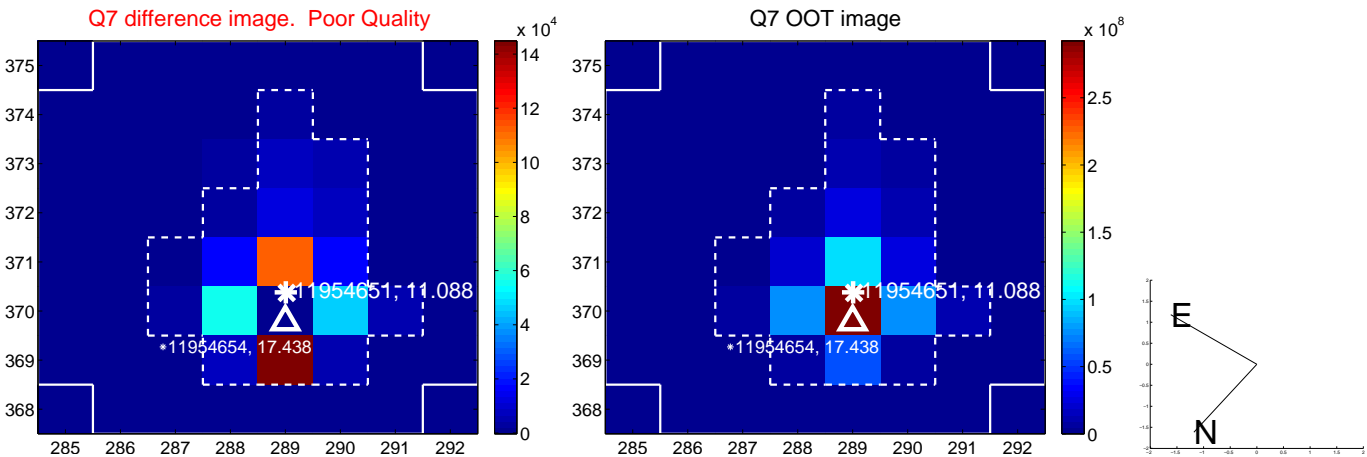
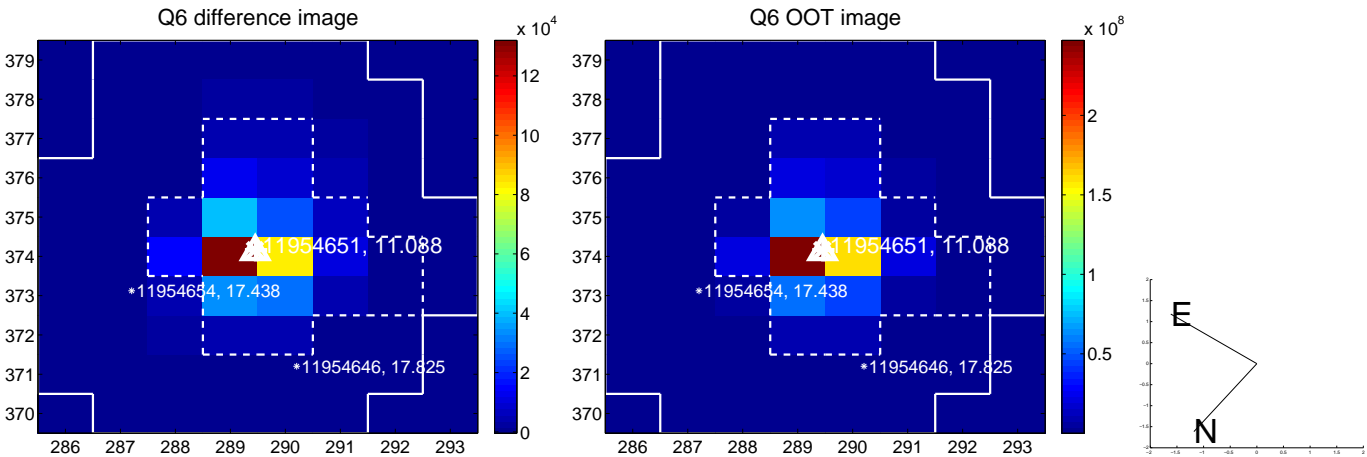
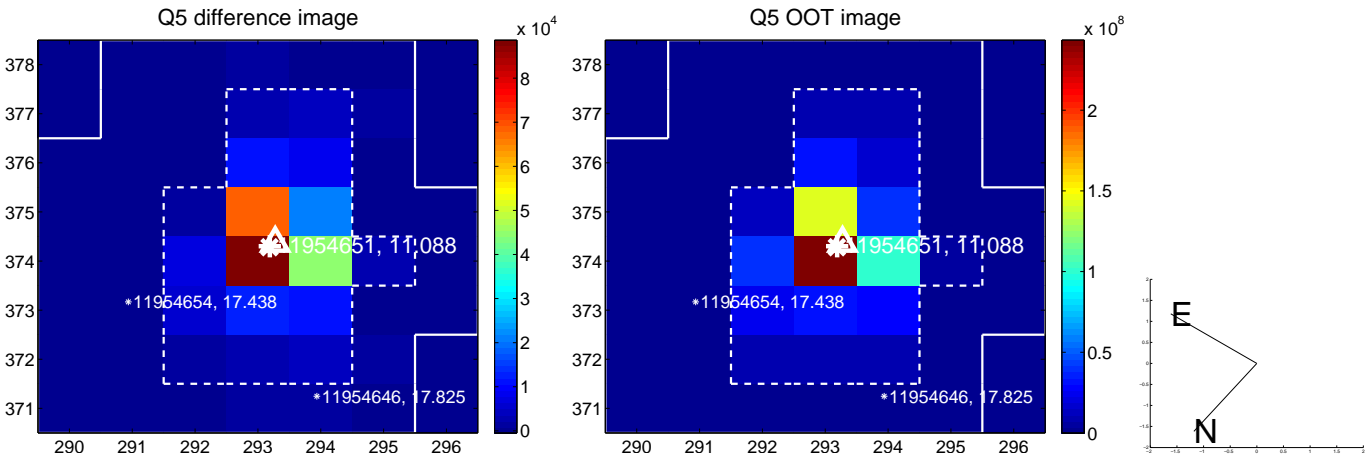


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

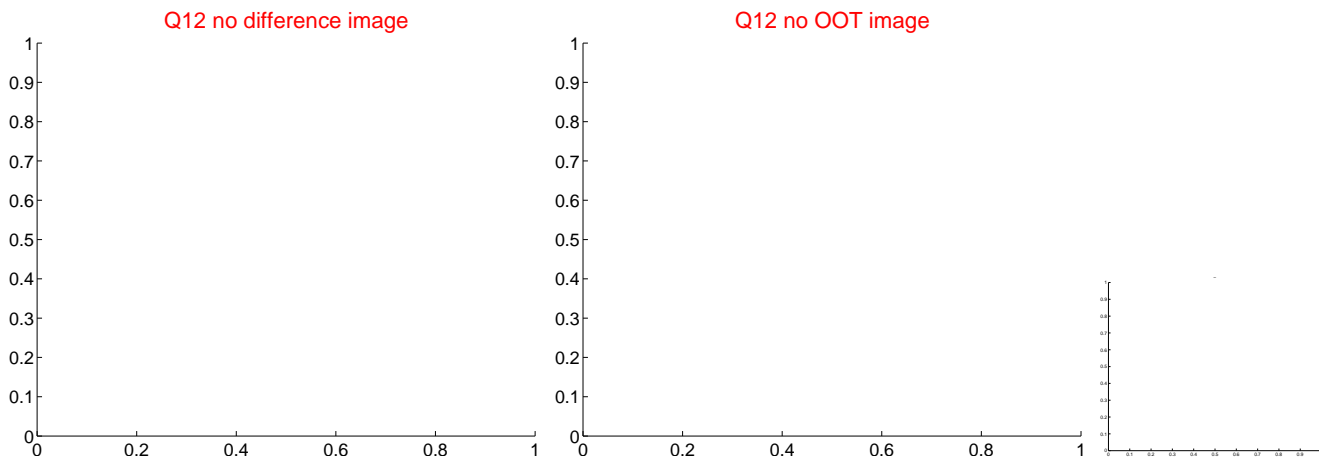
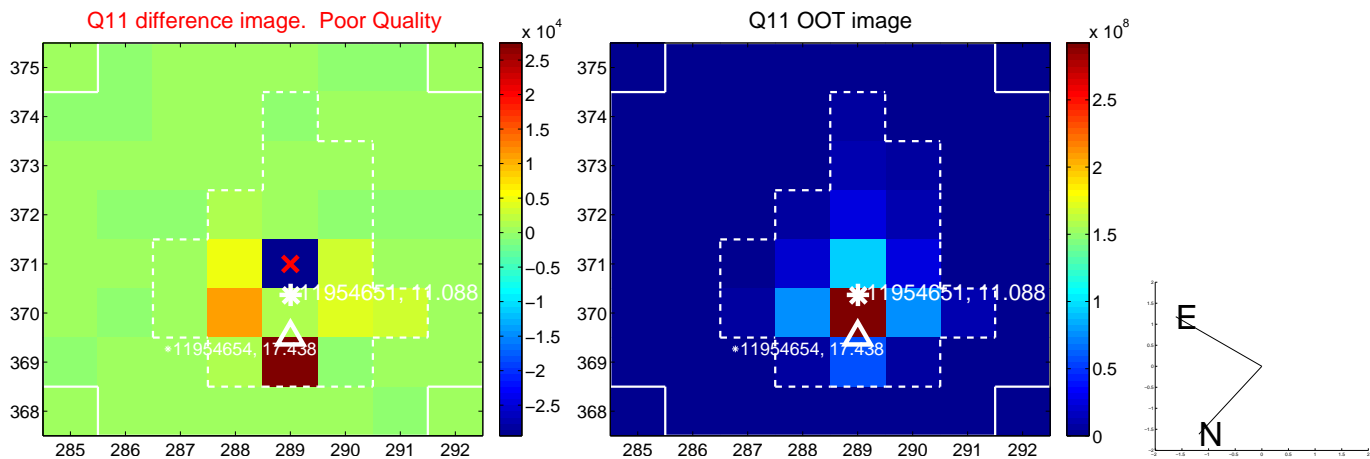
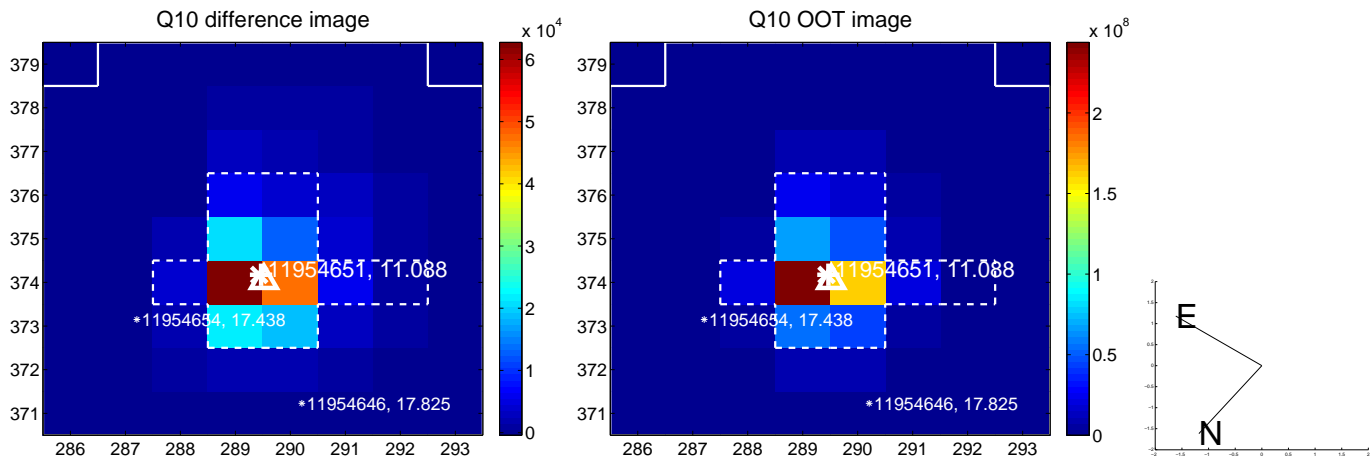
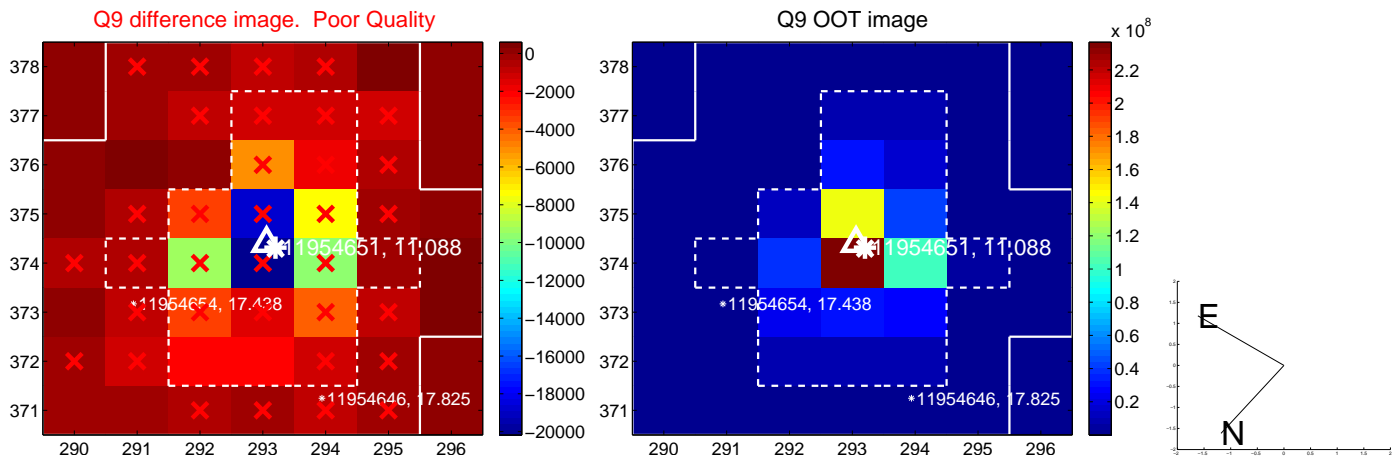
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



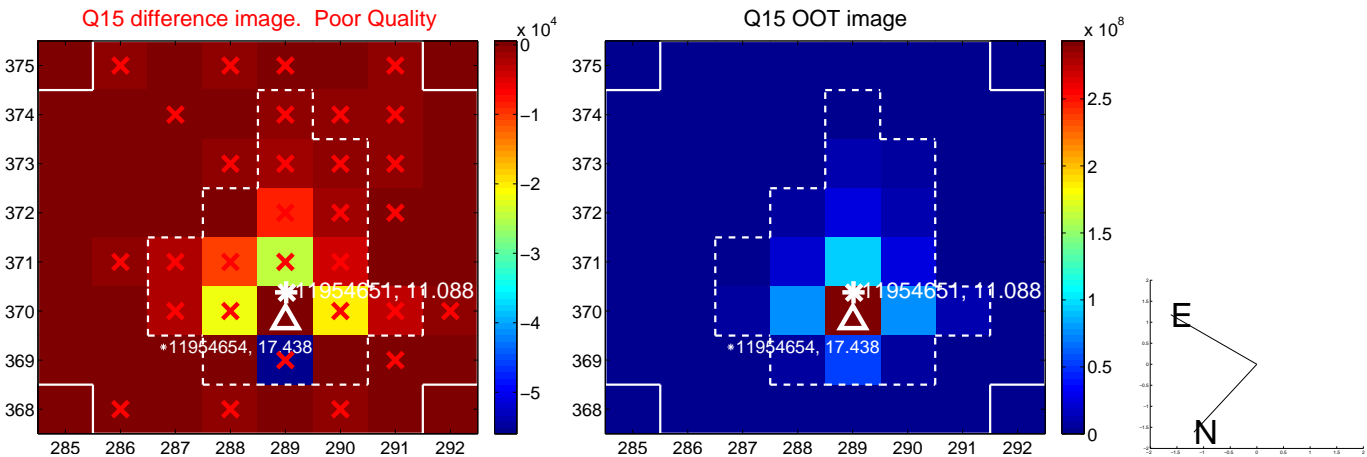
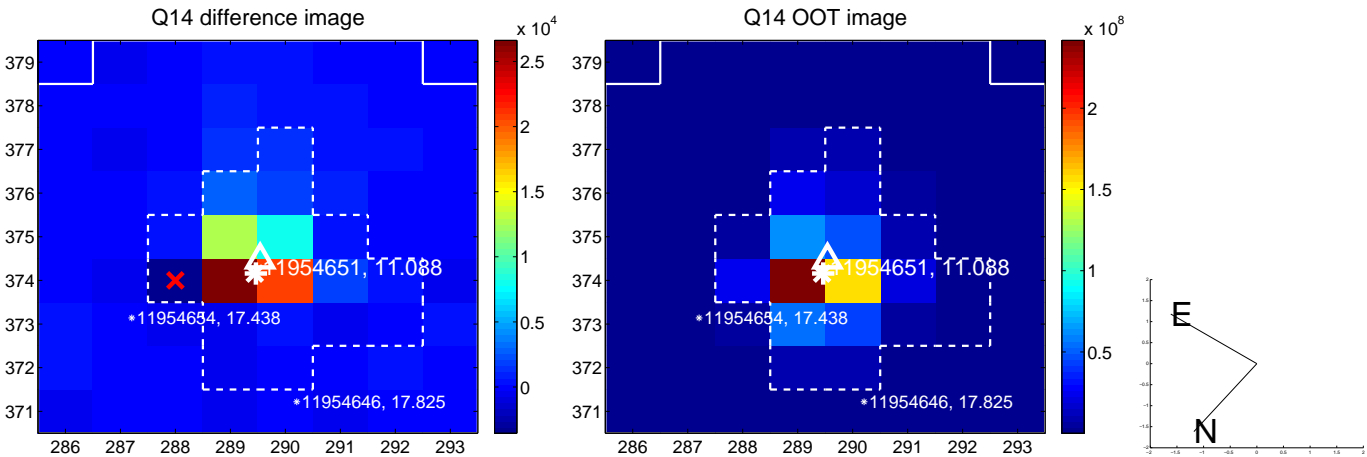
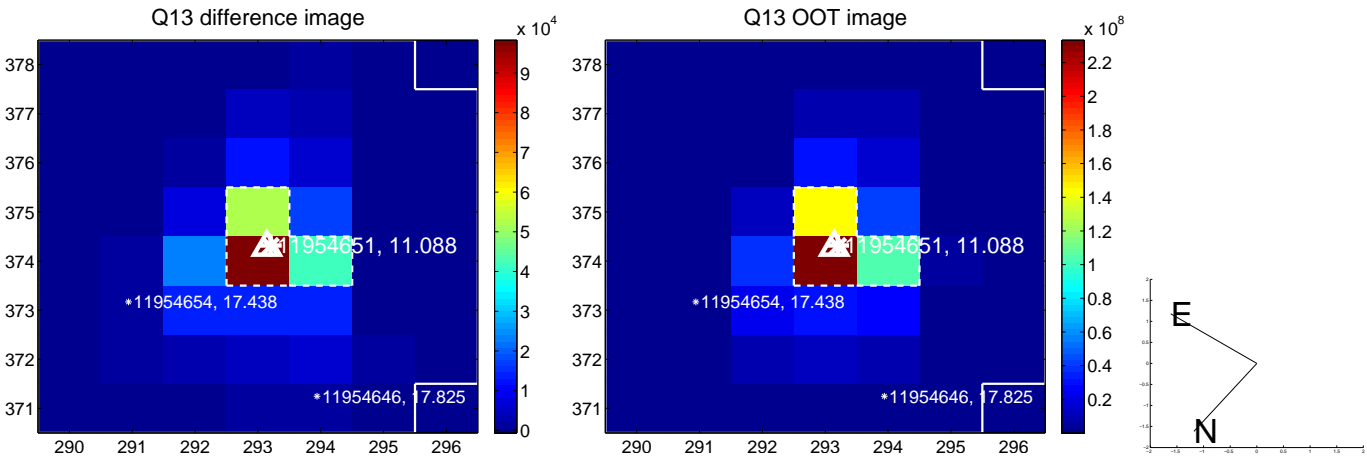
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



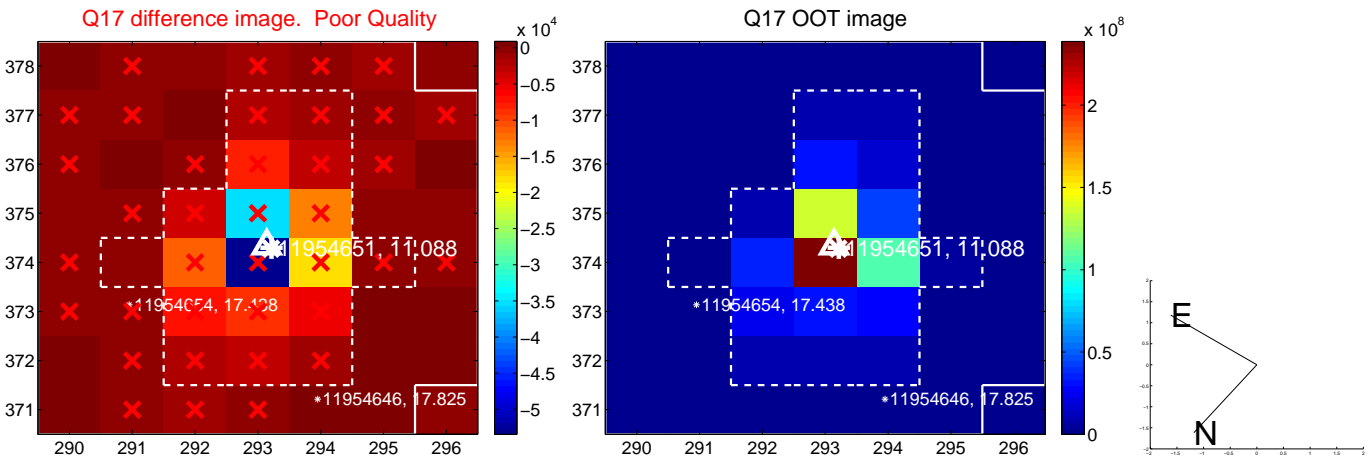
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



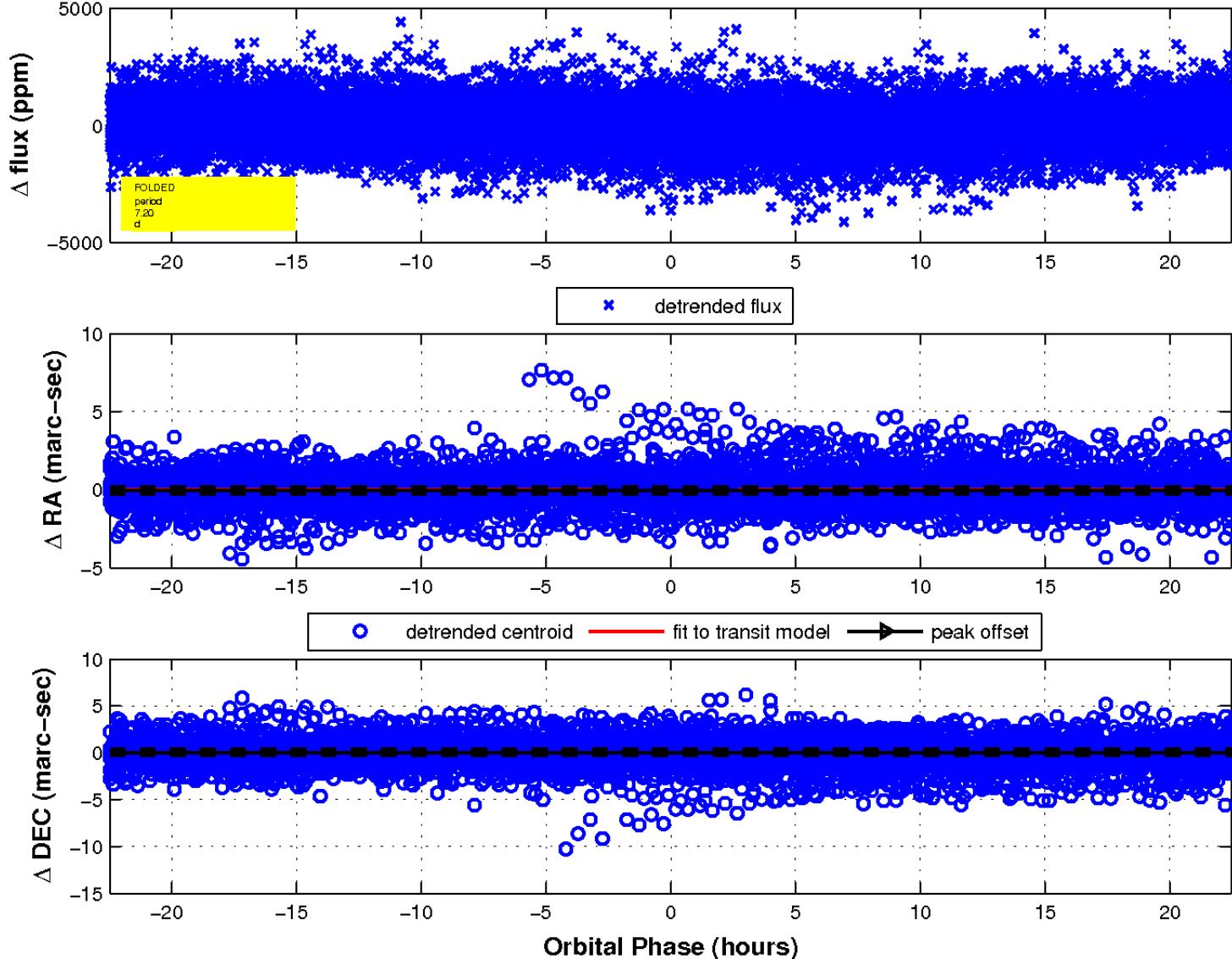
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

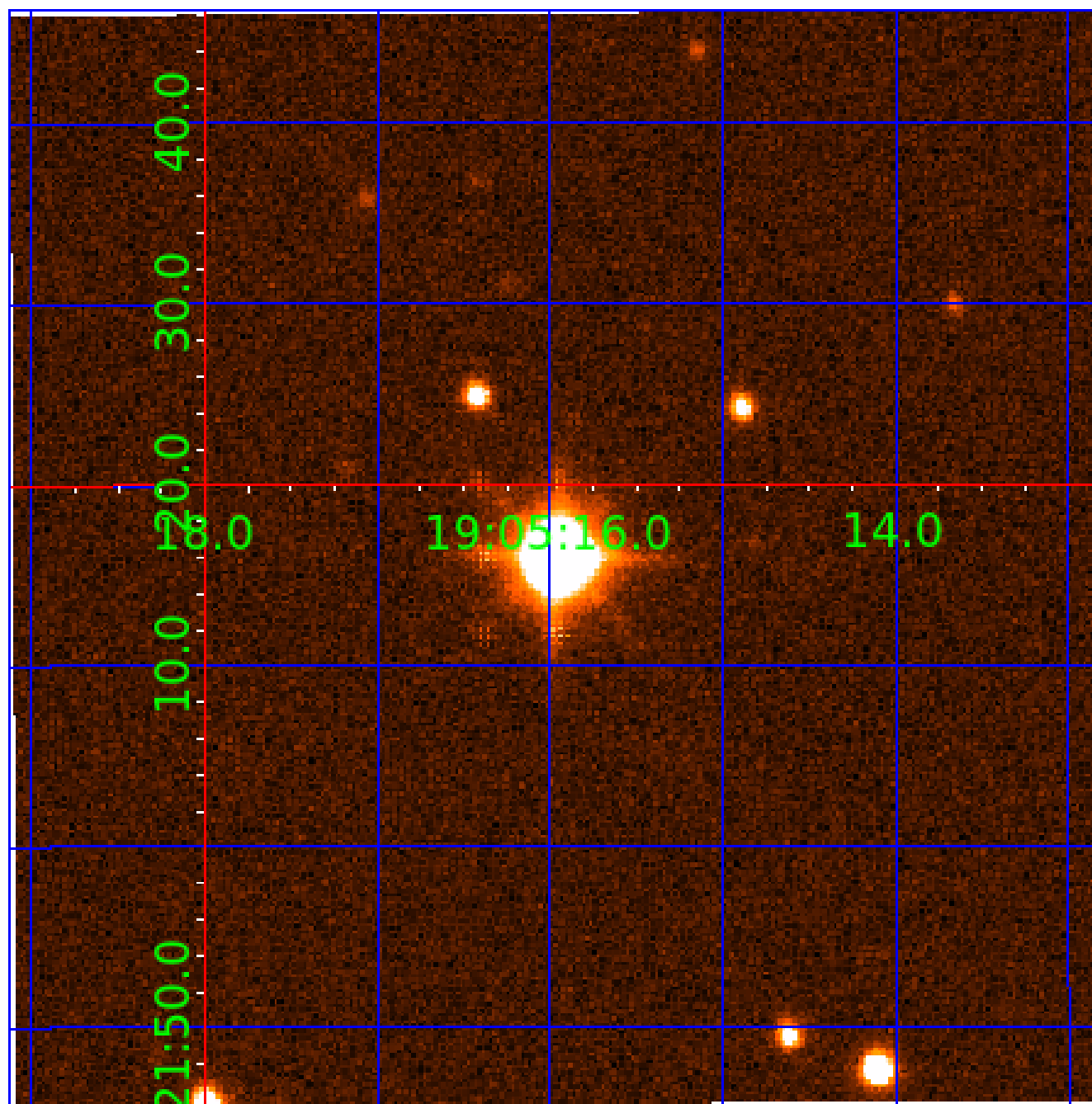


fluxWeightedCentroids, Planet 3 of 8



UKIRT Image

Declination



KIC 011954651

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})
011954651-01	OBS	No	0.700292	132.024552	141.9	3.982	10.3	11.8	1.73	6810	2.39	21675.65
011954651-02	OBS	No	7.200909	133.761875	989.6	8.358	12.9	15.0	1.73	6810	10.09	969.38
011954651-03	OBS	No	7.200587	136.289486	835.7	7.495	11.9	12.9	1.73	6810	6.35	969.44
011954651-04	OBS	No	28.803844	132.031813	1159.9	3.834	8.6	8.2	1.73	6810	9.99	152.67
011954651-05	OBS	No	16.779839	137.982768	703.6	5.791	7.9	8.2	1.73	6810	4.92	313.78
011954651-06	OBS	No	50.409778	173.913015	913.5	3.079	7.7	7.8	1.73	6810	5.88	72.39
011954651-07	OBS	No	41.948088	150.285561	1818.2	2.615	8.2	8.1	1.73	6810	8.28	92.48
011954651-08	OBS	No	51.694463	159.140573	59.9	6.000	7.8	-1.0	1.73	6810	1.35	70.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

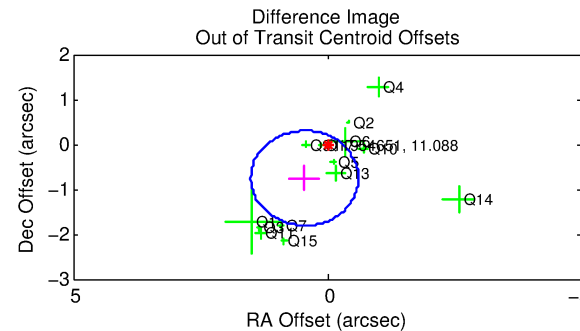
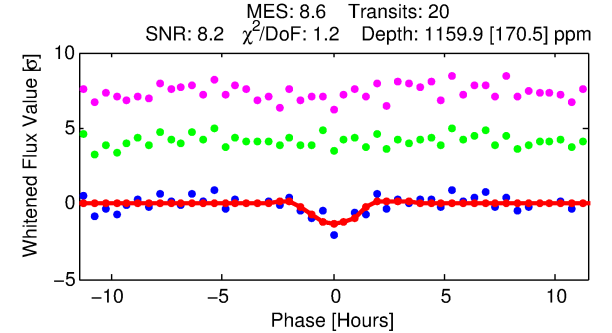
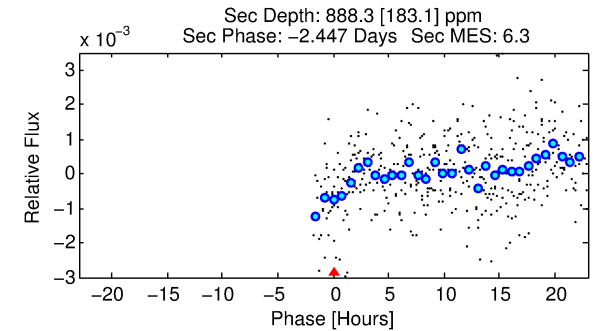
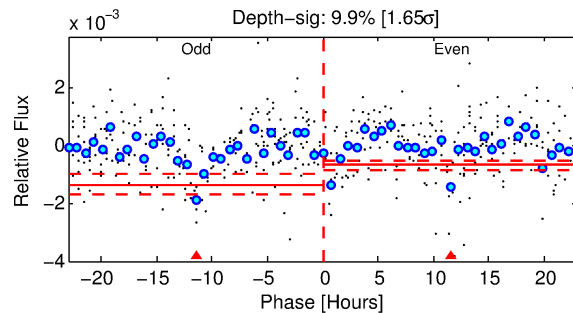
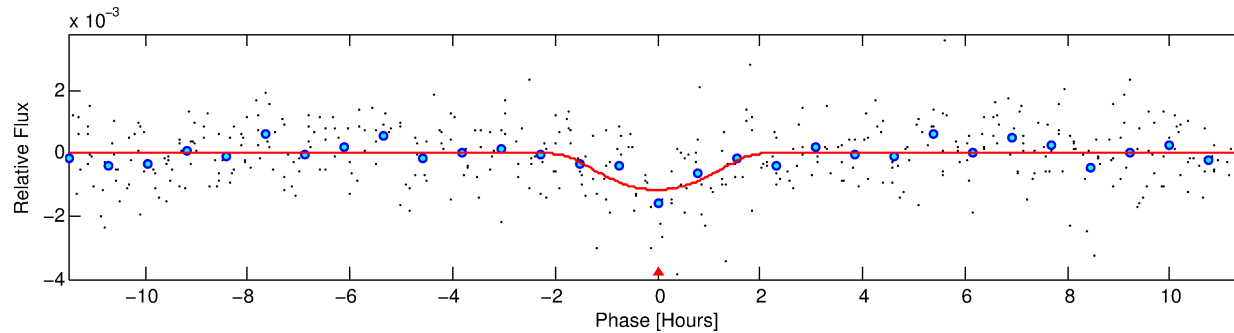
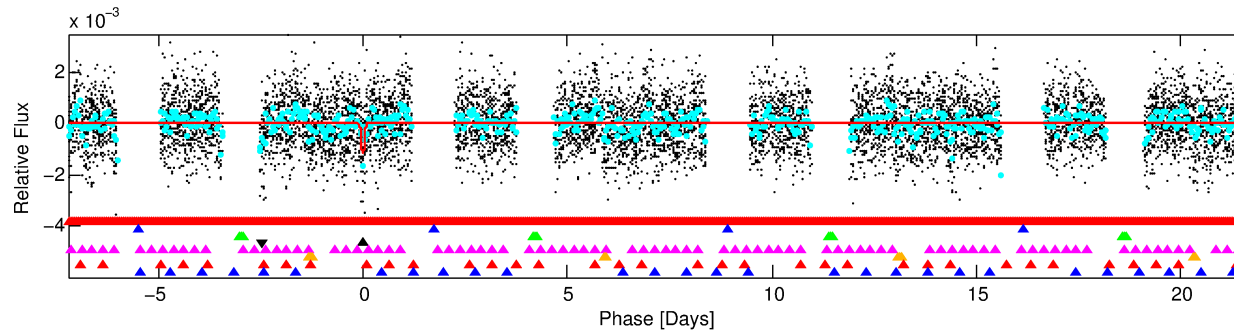
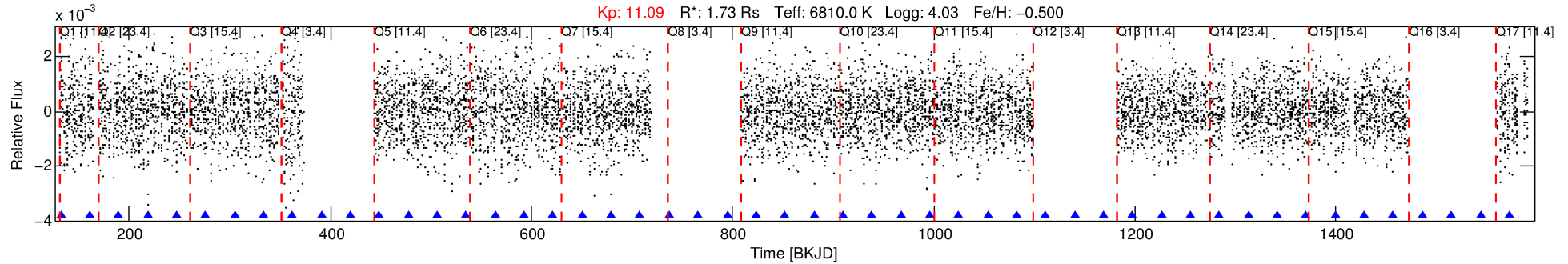
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-04

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 4 of 8 Period: 28.804 d



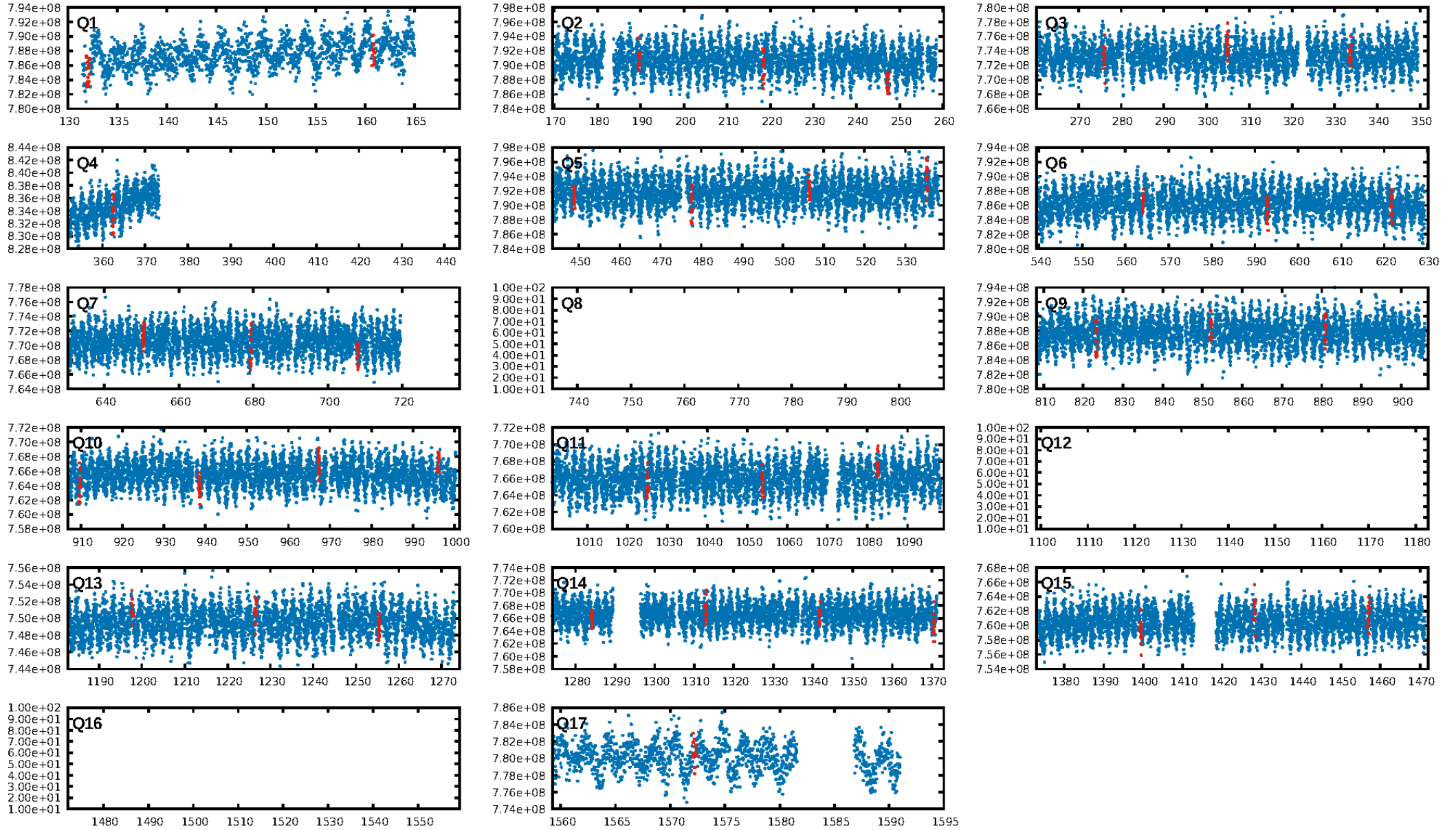
DV Fit Results:

Period = 28.80384 [0.00043] d
Epoch = 132.0318 [0.0118] BKJD
 $R_p/R^* = 0.0530$ [0.1944]
 $a/R^* = 20.33$ [21.01]
 $b = 0.99$ [0.31]
 $\text{Seff} = 152.67$ [81.90]
 $T_{\text{eq}} = 896$ [120] K
 $R_p = 9.99$ [36.78] R_e
 $a = 0.1940$ [0.0619] AU
 $\text{Ag} = 184.40$ [1356.22] [0.14 σ]
 $T_{\text{eff}} = 5107$ [9370] K [0.45 σ]

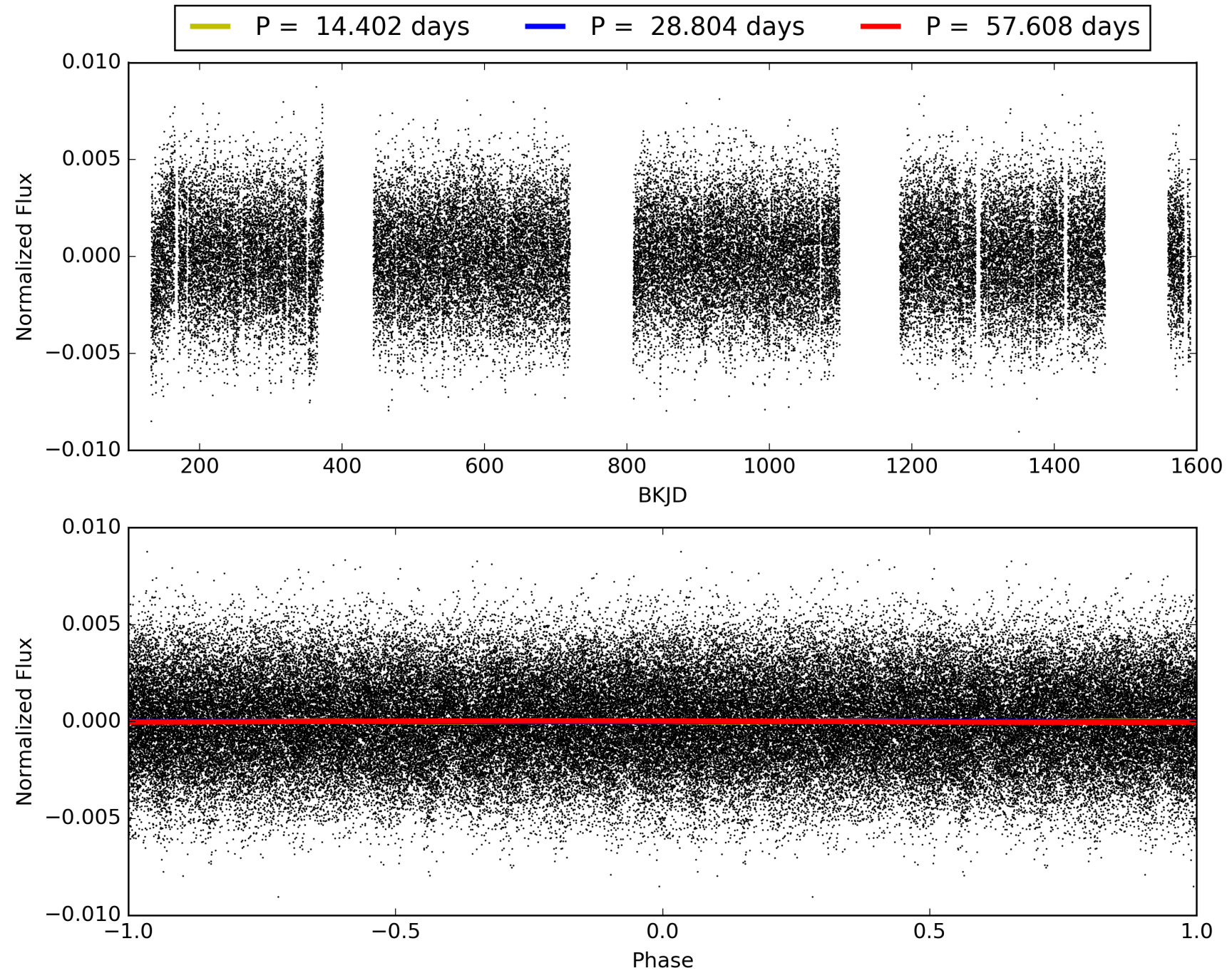
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.55 σ]
LongPeriod-sig: 100.0% [67.98 σ]
ModelChiSquare2-sig: 19.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: 5.996
Centroid-sig: 0.0%
Centroid-so: 0.260 arcsec [3.44 σ]
OotOffset-rm: 0.881 arcsec [2.50 σ]
KicOffset-rm: 0.939 arcsec [2.35 σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 0.36 [5/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011954651-04, PDC Light Curves

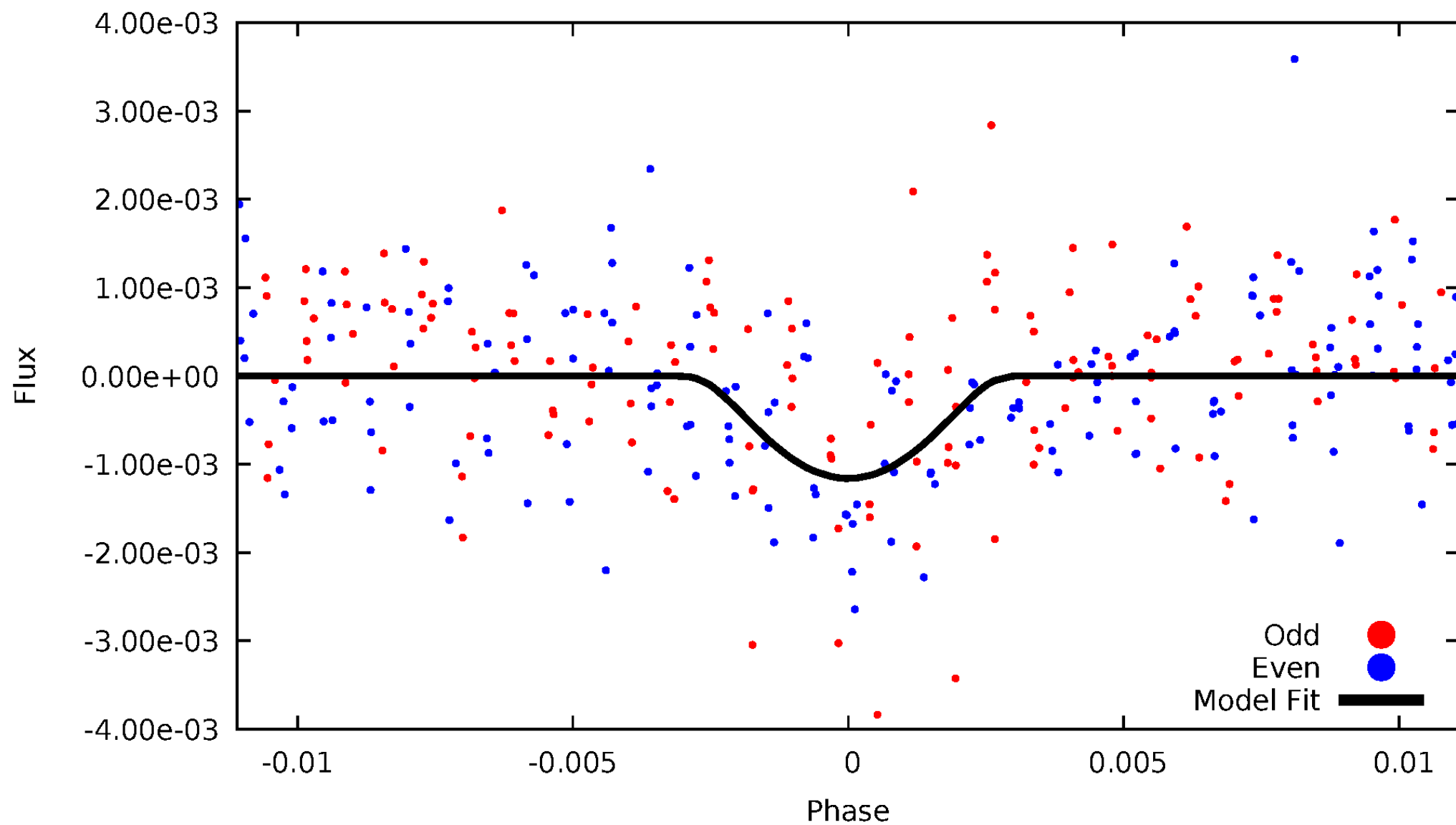


TCE 011954651-04



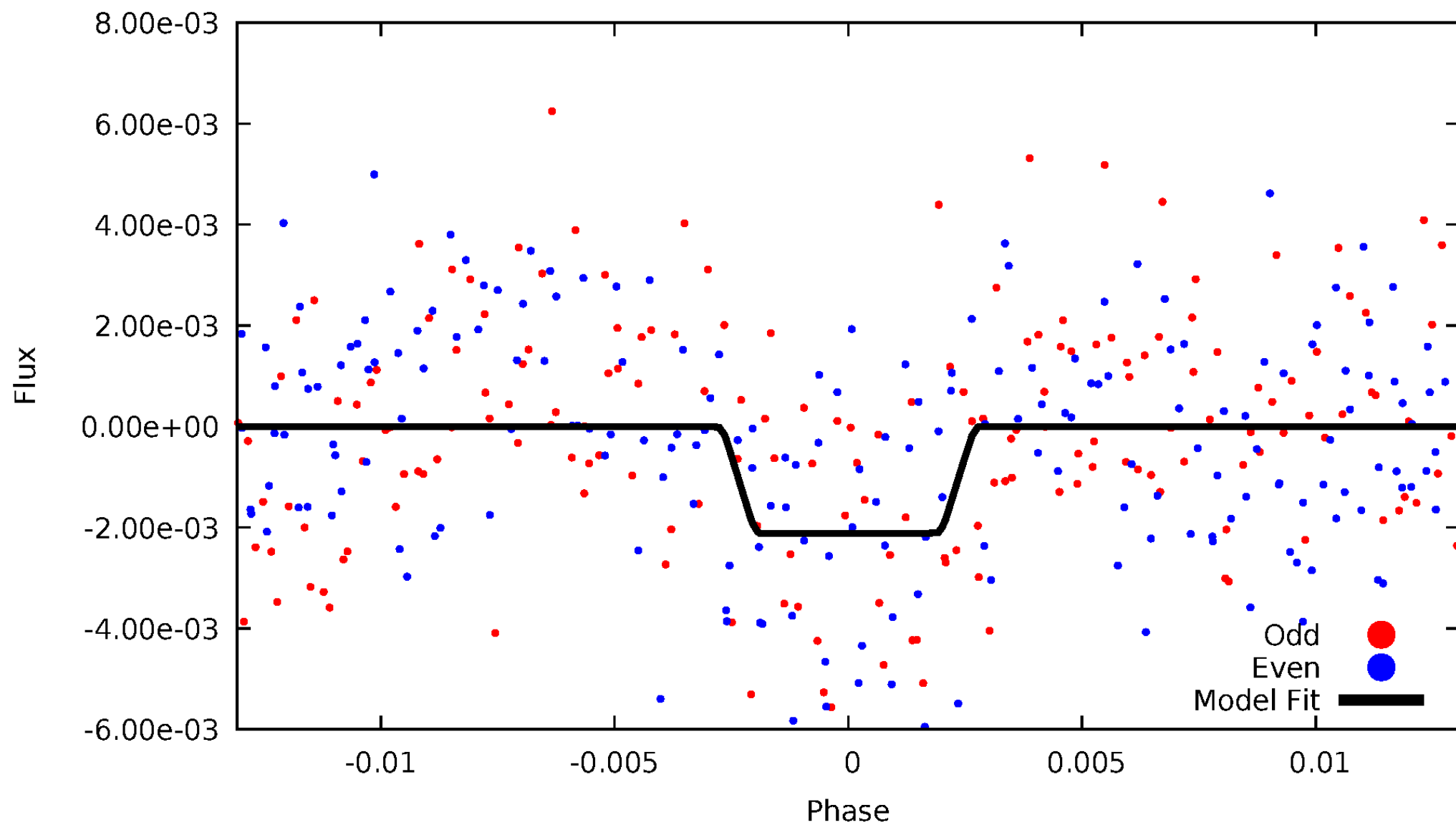
DV Odd/Even

TCE 011954651-04



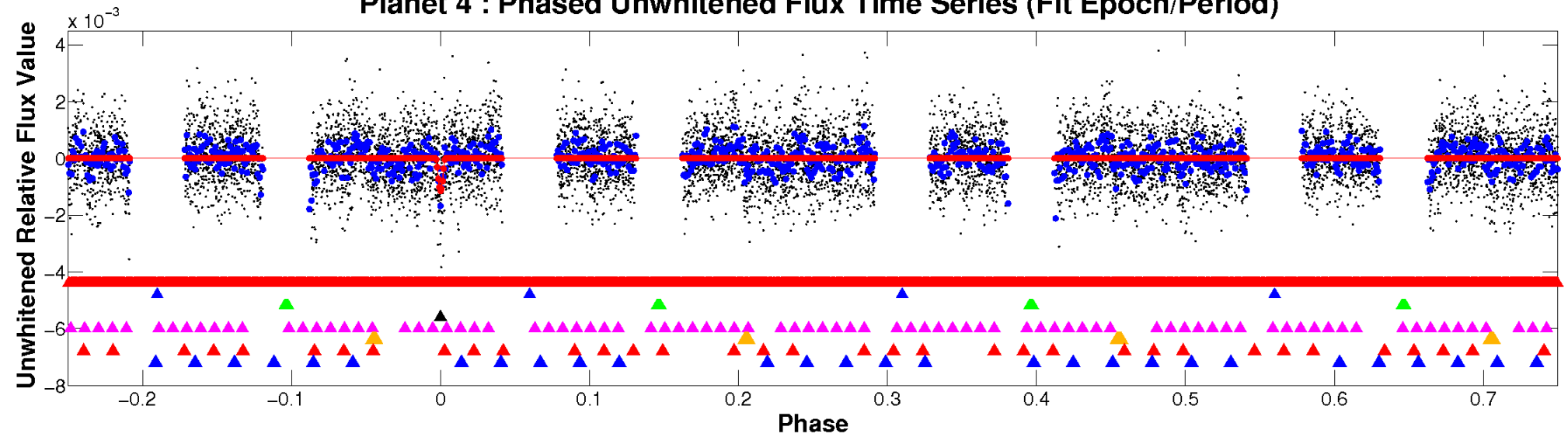
ALT Odd/Even

TCE 011954651-04

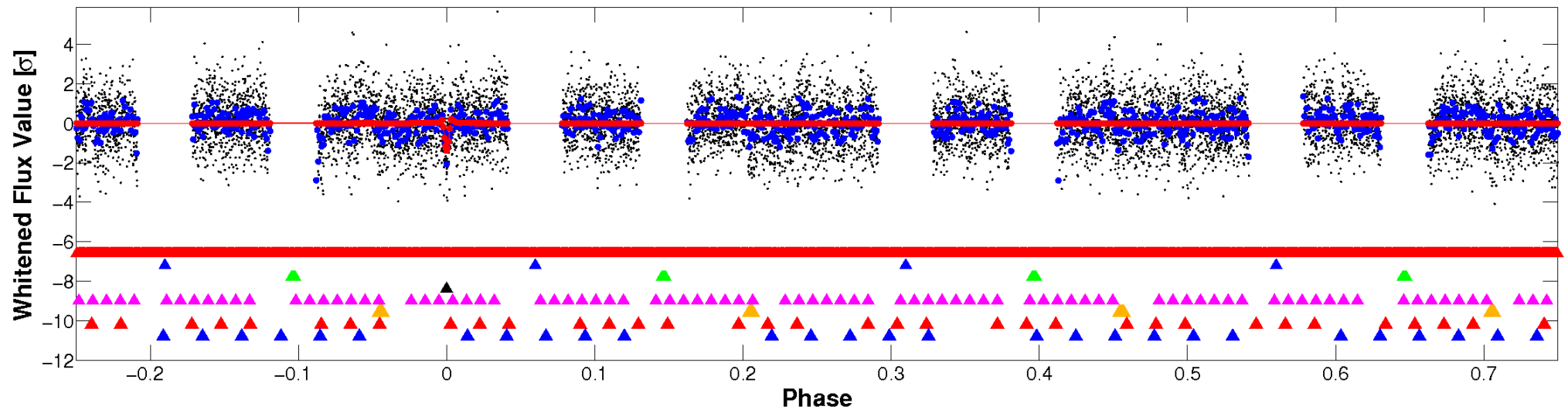


Non-Whitened Vs. Whitened Light Curve

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

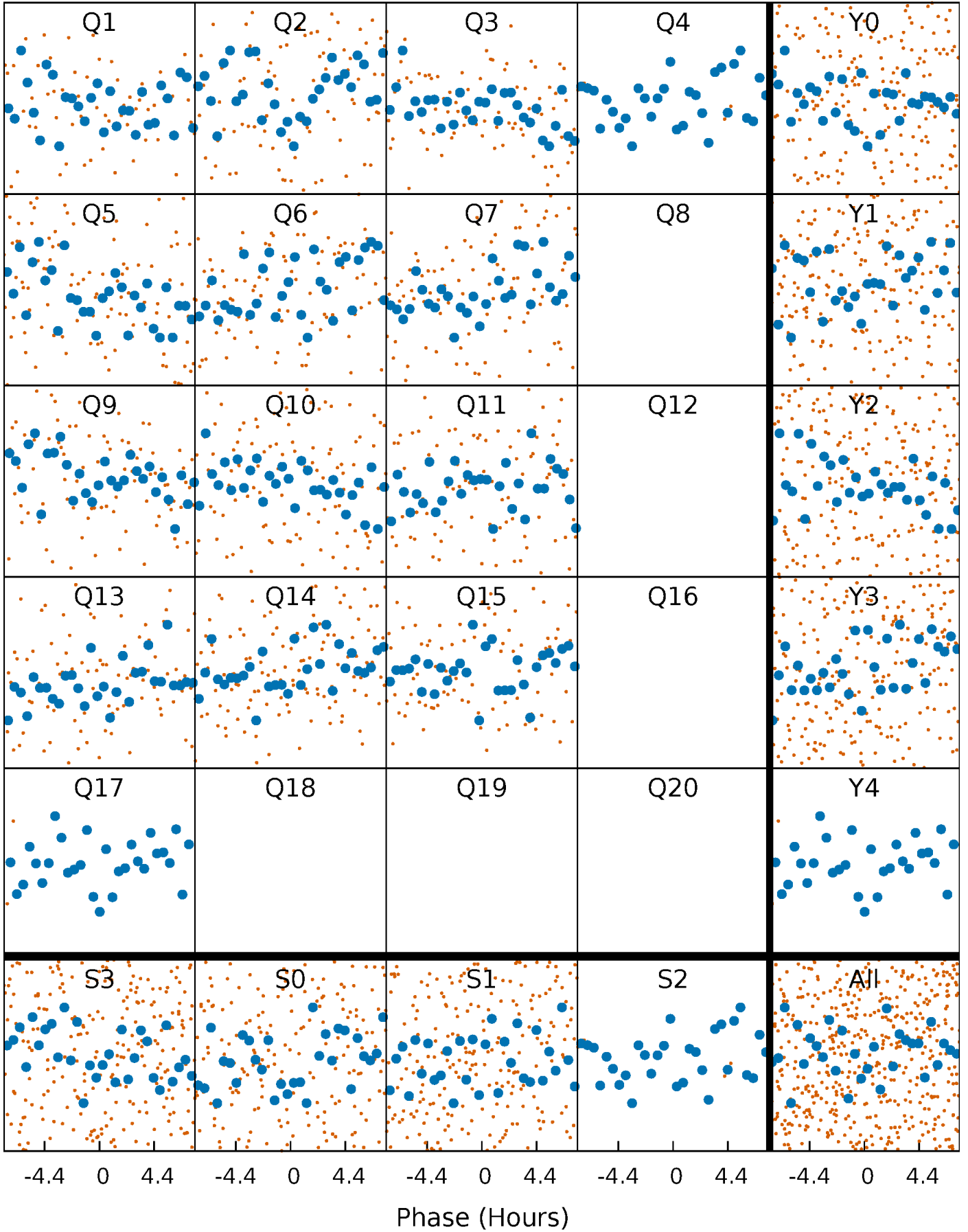


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



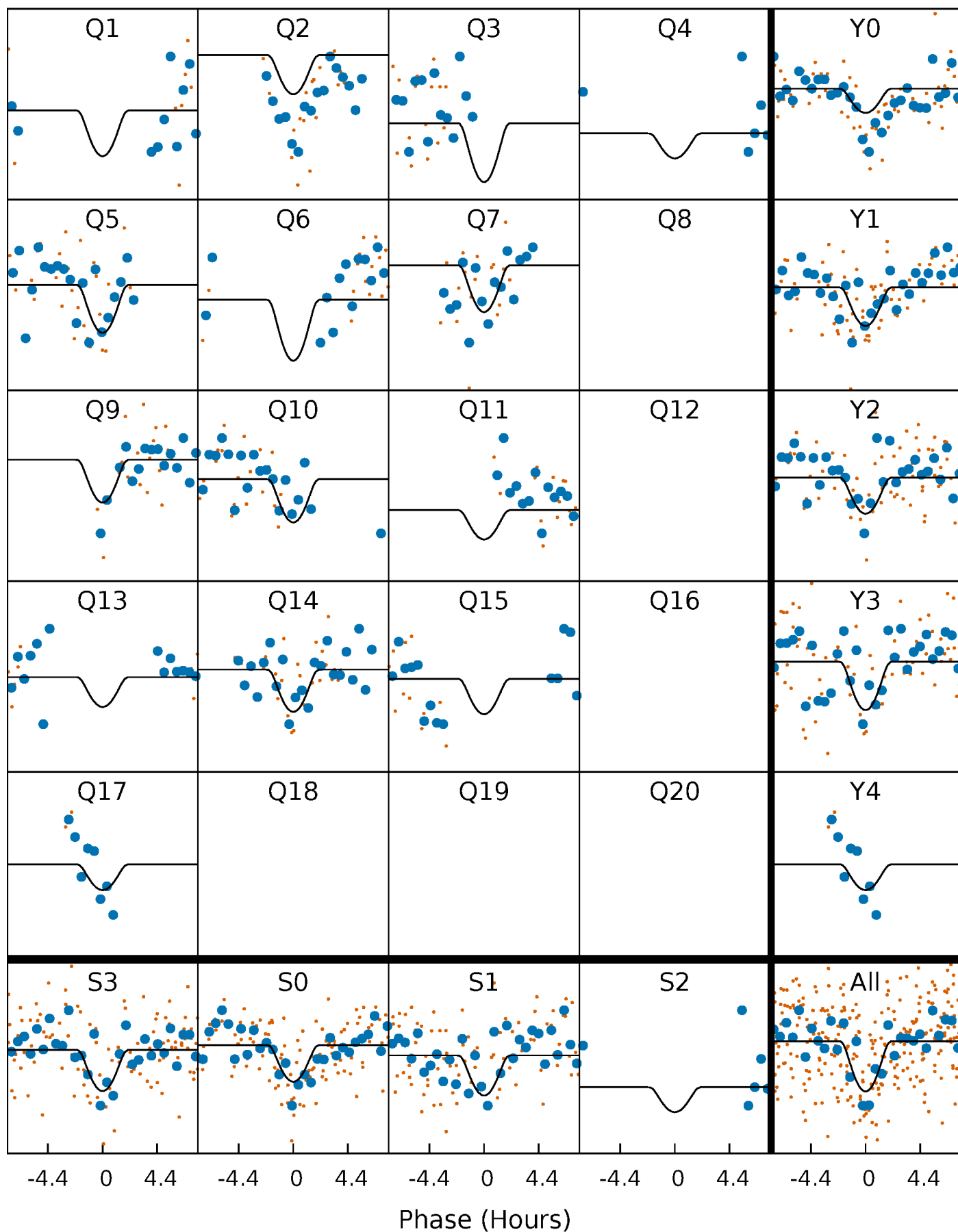
PDC Quarter-Phased Transit Curves

TCE 011954651-04 P= 28.803844 Days $T_0=132.031813$ (BKJD)



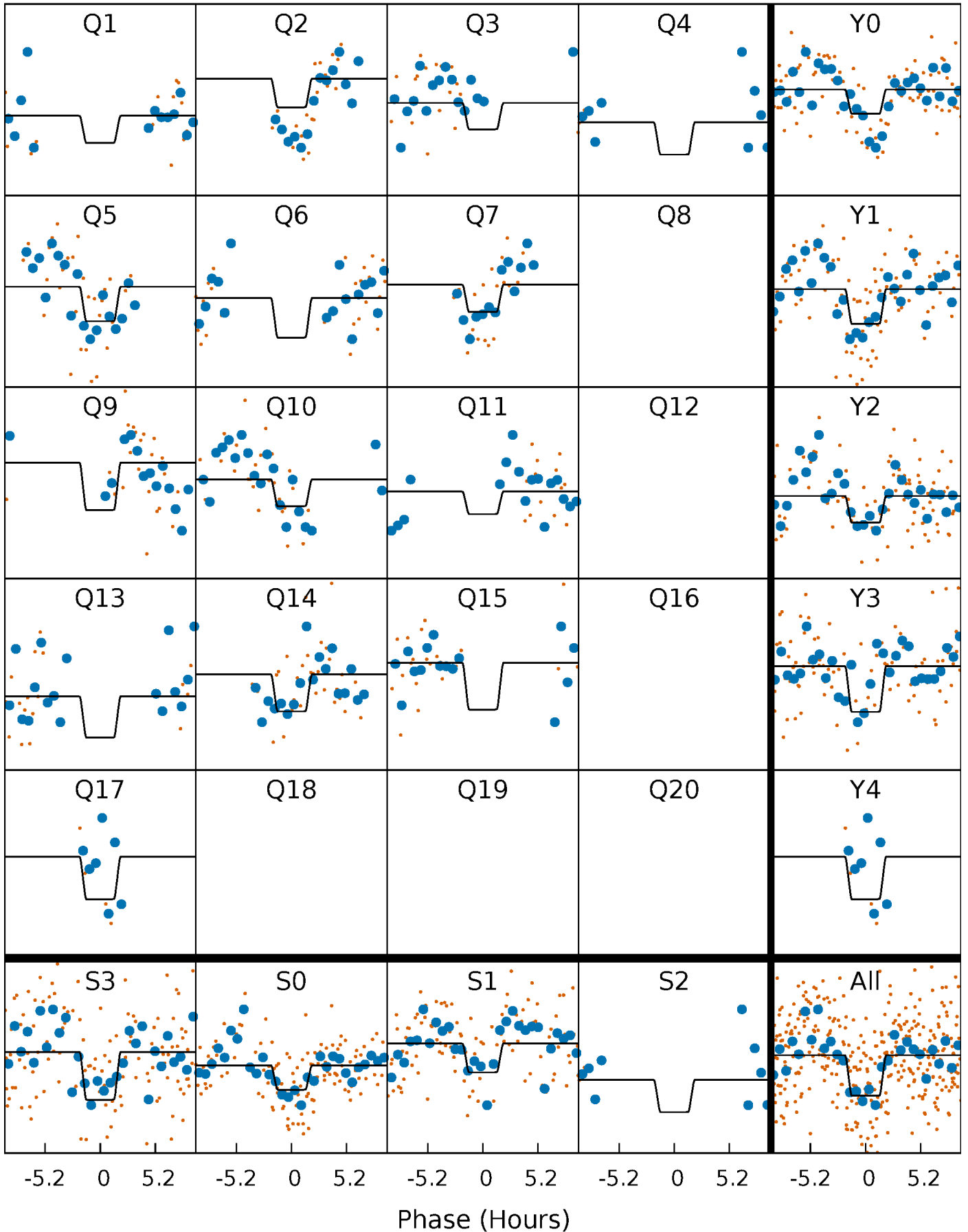
DV Quarter-Phased Transit Curves

TCE 011954651-04 P= 28.803844 Days $T_0=132.031813$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

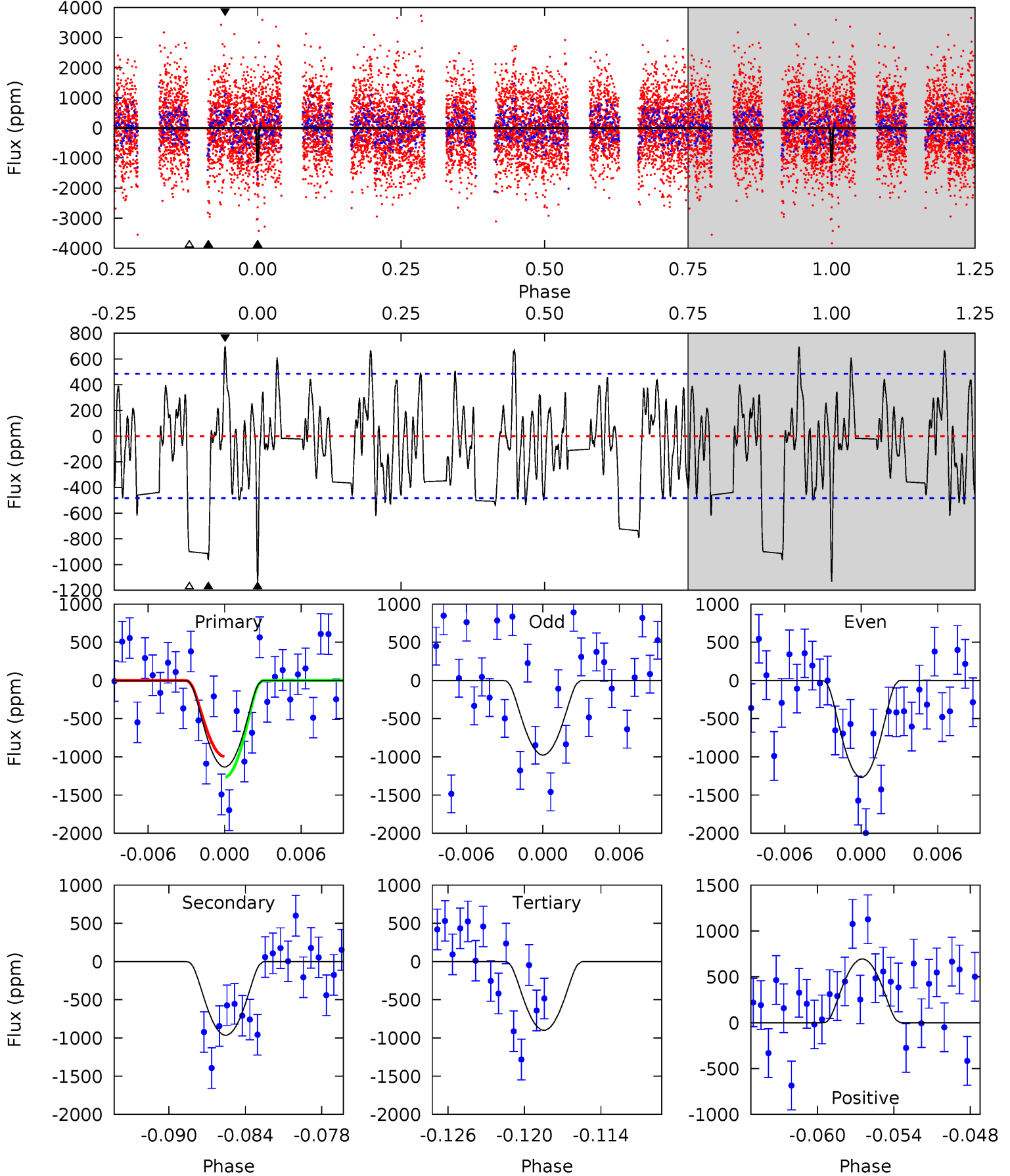
TCE 011954651-04 P= 28.803418 Days $T_0=132.008806$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-04, P = 28.803844 Days, E = 103.227969 Days

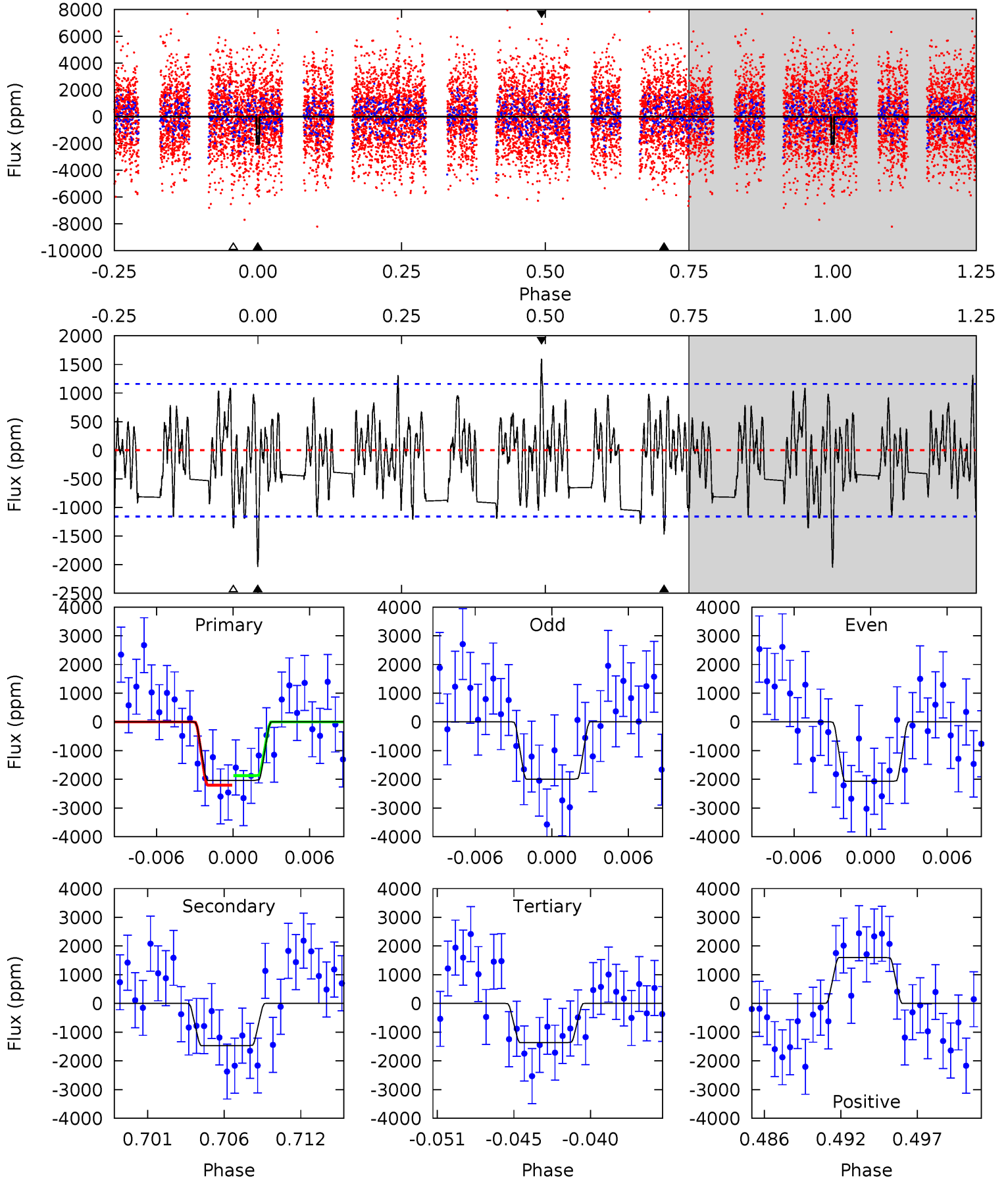
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	10.2	9.52	7.35	5.12	2.75	2.80	2.47	4.64	0.69	2.86	1.56	0.86	0.38	1.44



Alt Model-Shift Uniqueness Test

011954651-04, P = 28.803418 Days, E = 103.205388 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.02	6.51	6.03	7.08	5.13	2.77	2.17	2.99	1.94	0.47	-0.57	0.17	1.53	0.44	0.73



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-965 ± 94	$28.01^{+27.20}_{-19.66}$	1226^{+101}_{-107}	3488^{+2058}_{-644}	25^{+250}_{-18}
Alt.	-1468 ± 226	$28.38^{+27.92}_{-20.00}$	1232^{+102}_{-111}	3767^{+2459}_{-730}	39^{+382}_{-29}

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 $A_{obs} \gg 1.0$

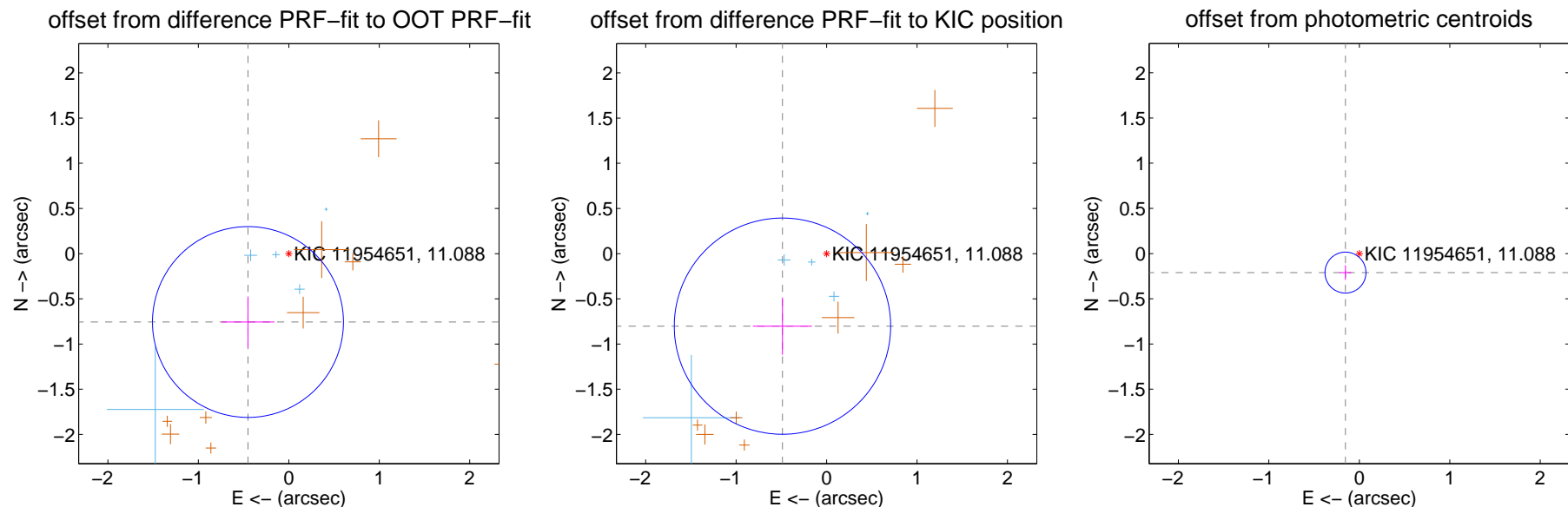
DV Centroid Data

Supplemental centroid analysis for 011954651-04. **Kepler magnitude: 11.09.** Transit SNR 8.24

There are 5 quarters with good PRF difference image offsets

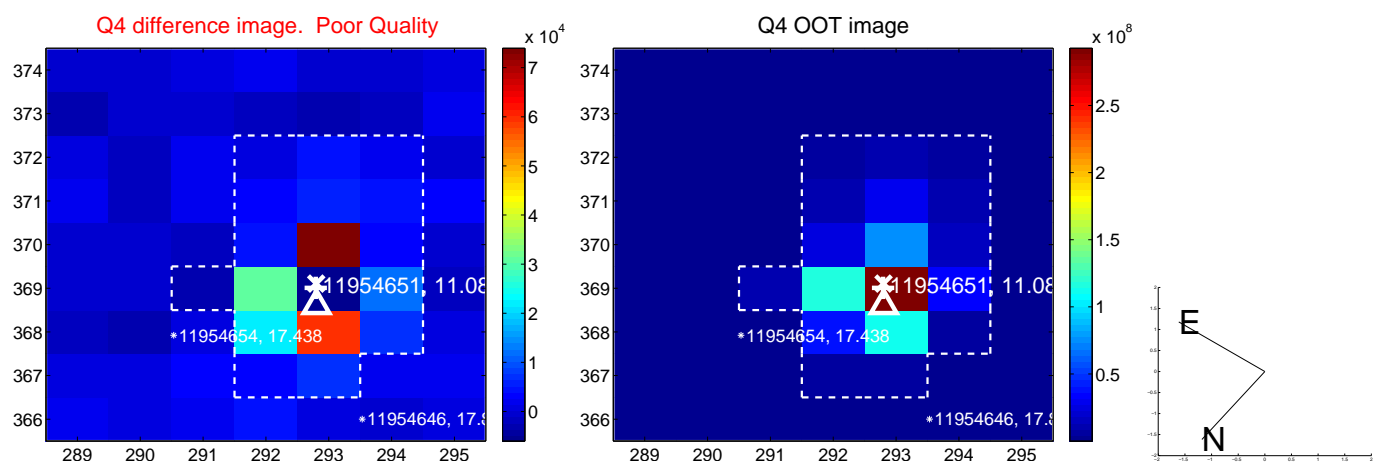
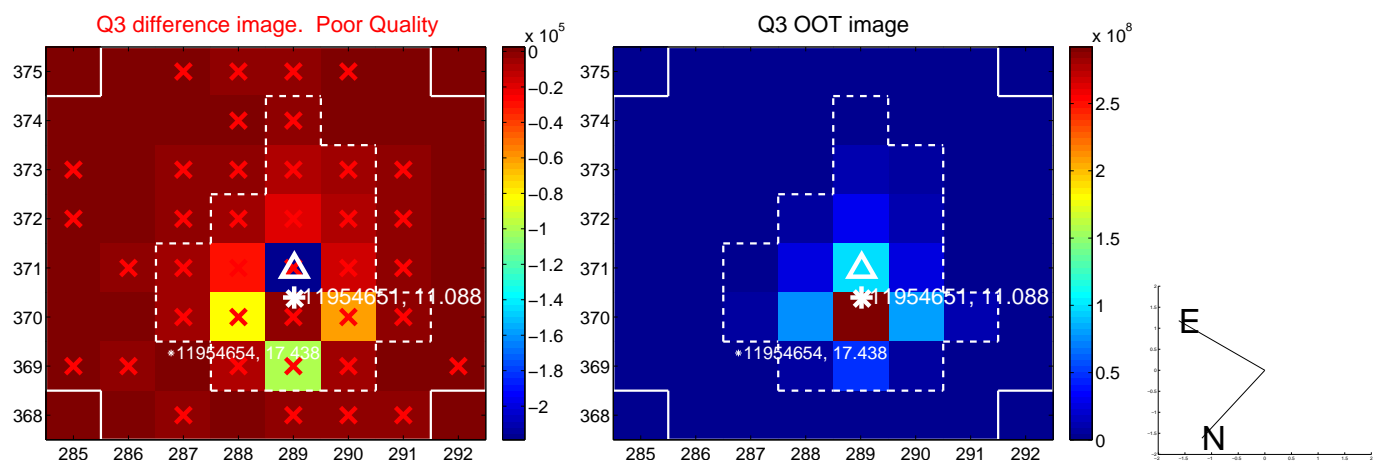
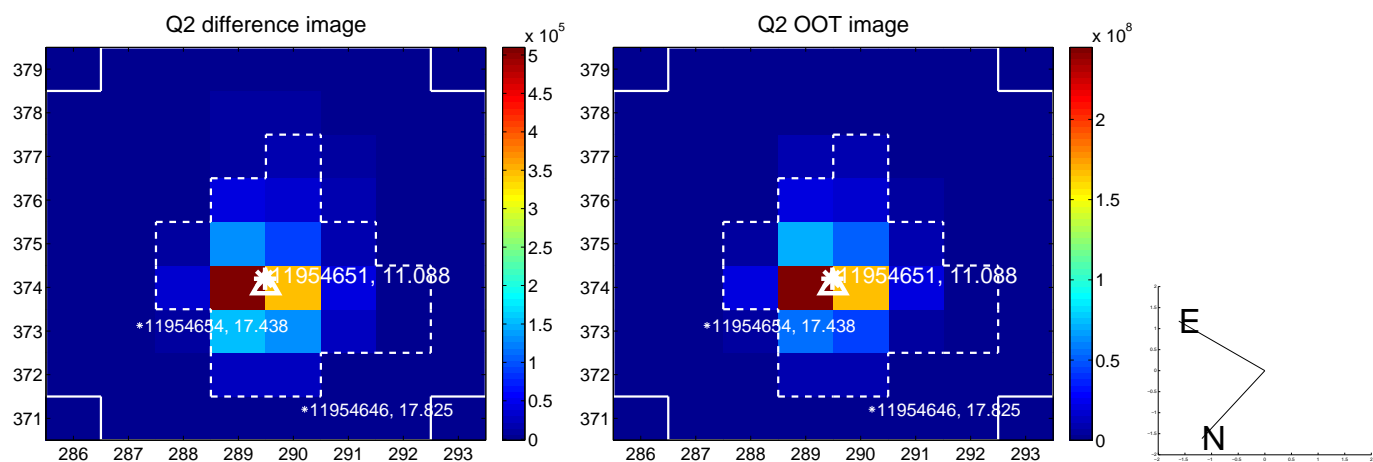
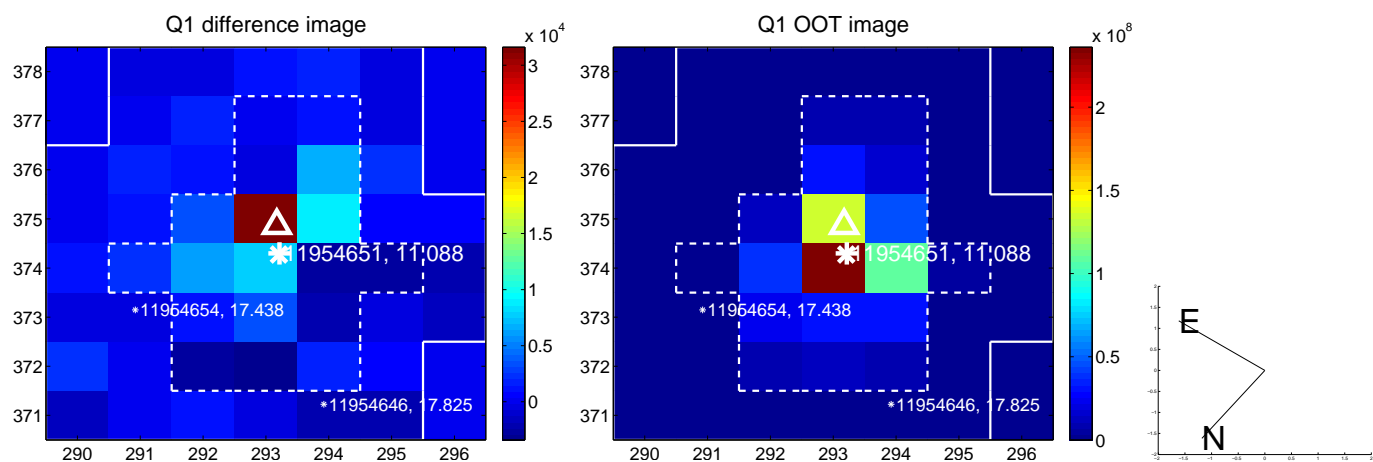
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.881 ± 0.352	2.50	0.452 ± 0.293	-0.757 ± 0.282
PRF-fit source offset from KIC position	0.939 ± 0.399	2.35	0.488 ± 0.326	-0.802 ± 0.317
photometric centroid source offset	0.26 ± 0.08	3.44	0.15 ± 0.06	-0.21 ± 0.08

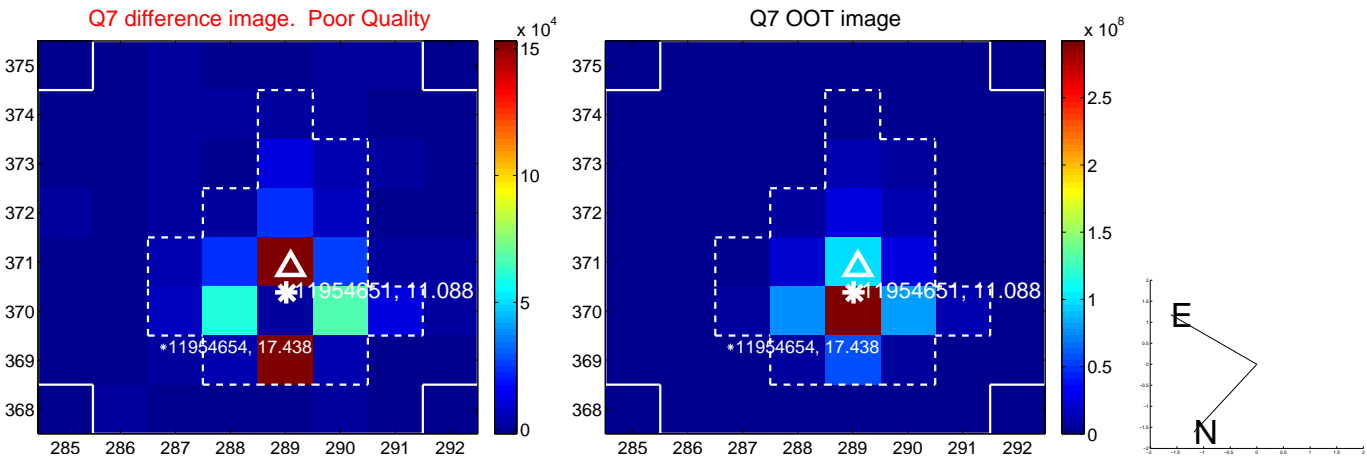
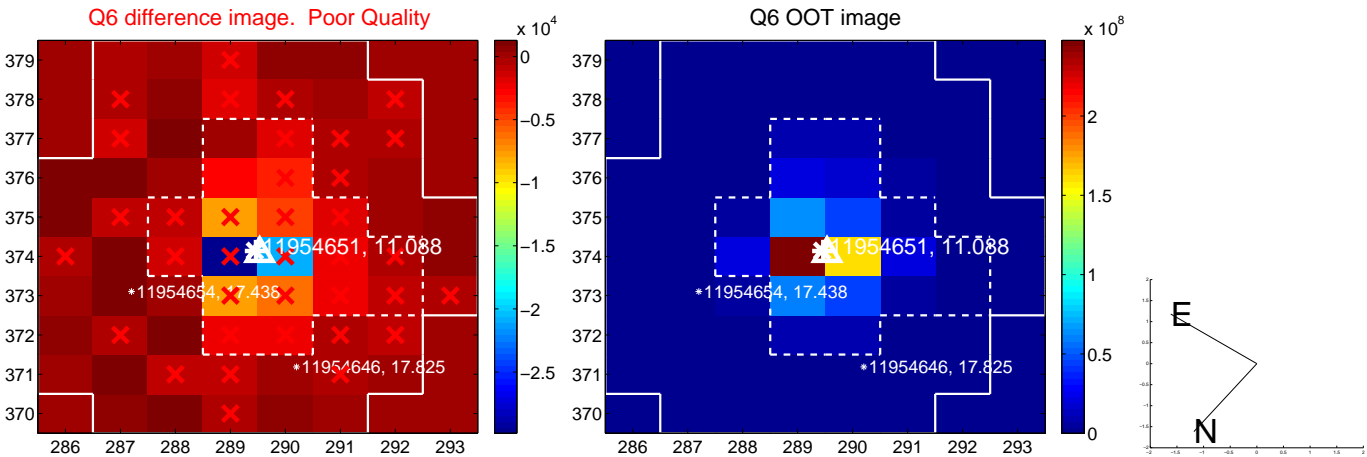
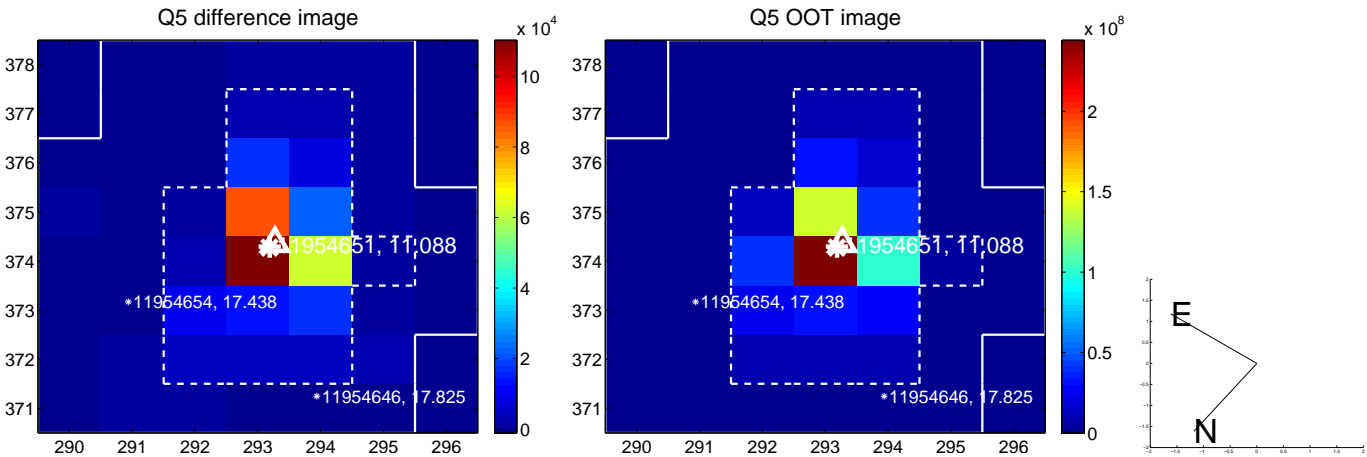


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

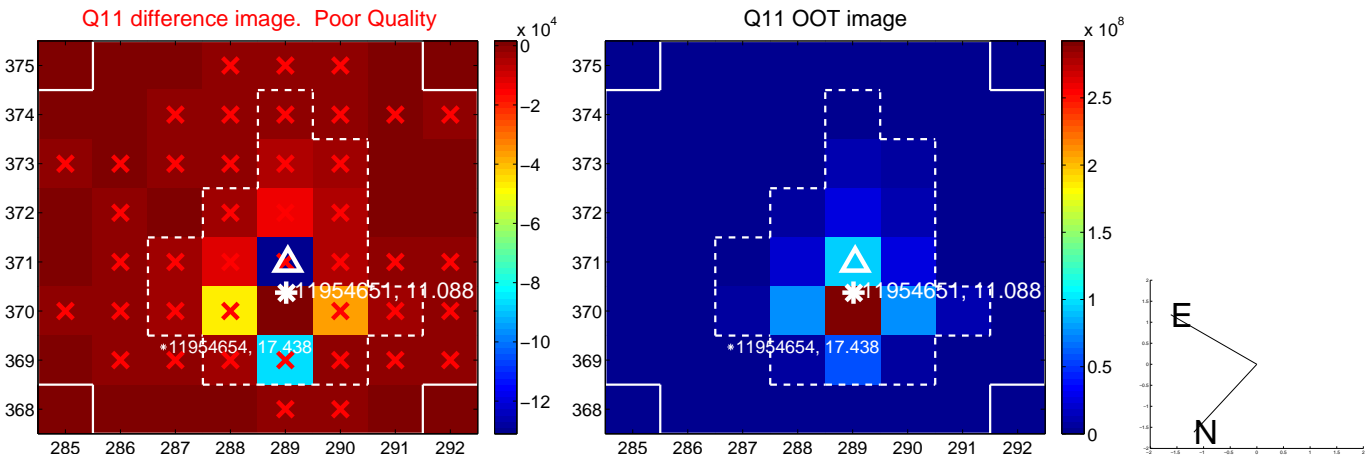
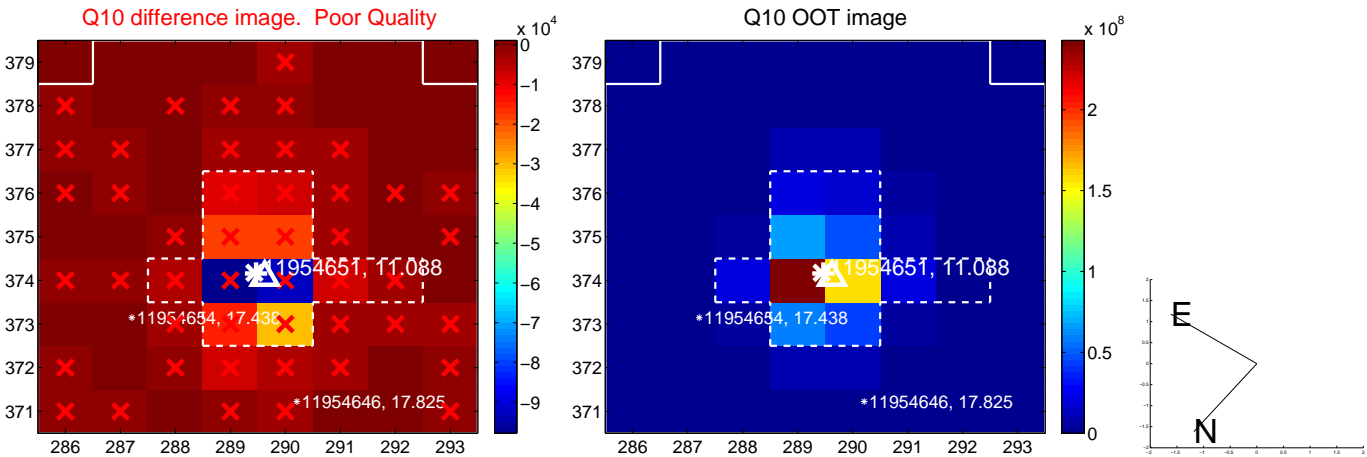
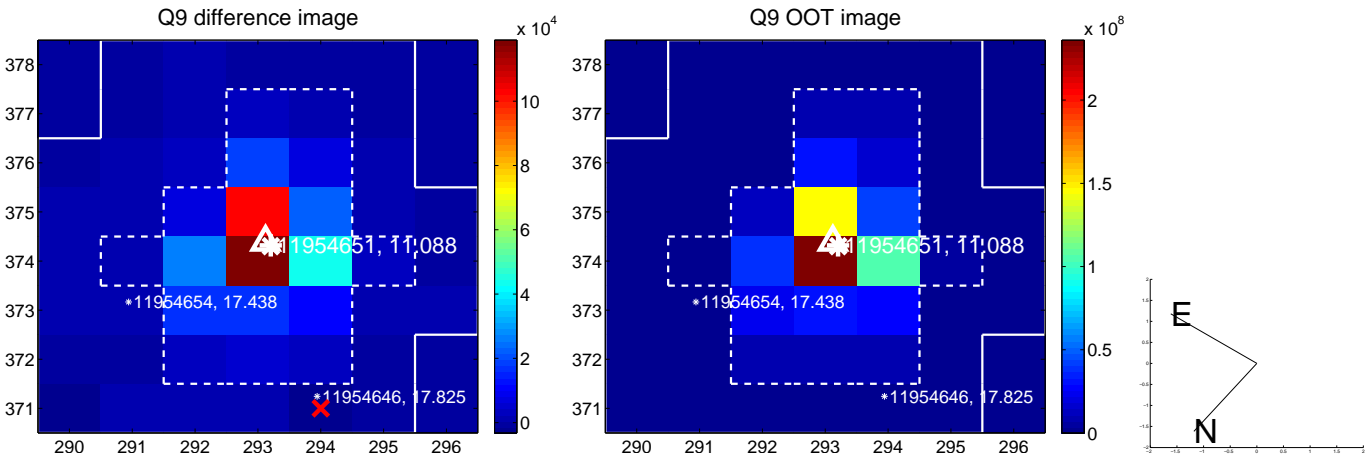
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



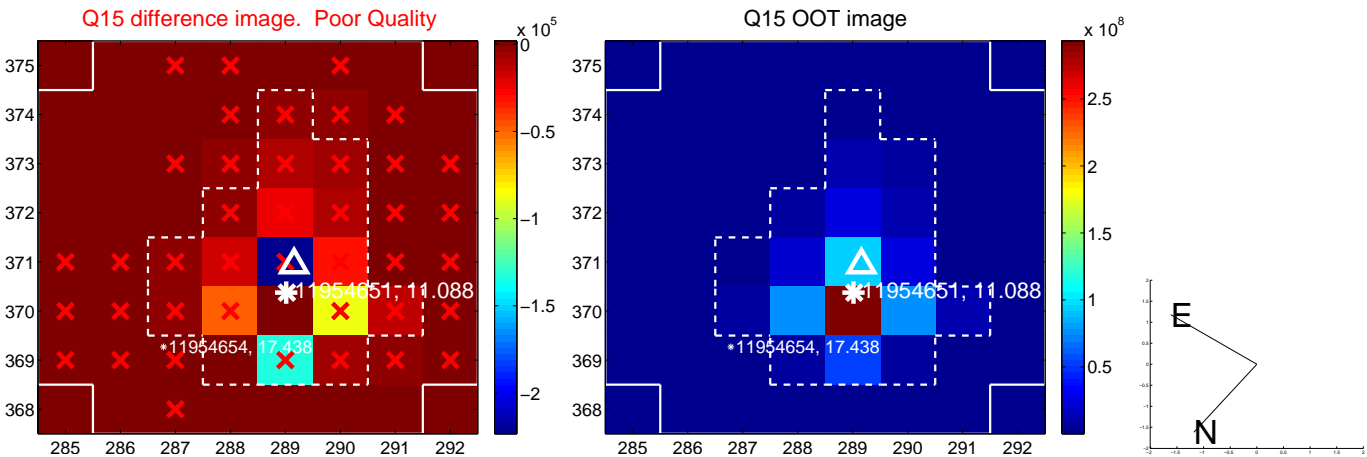
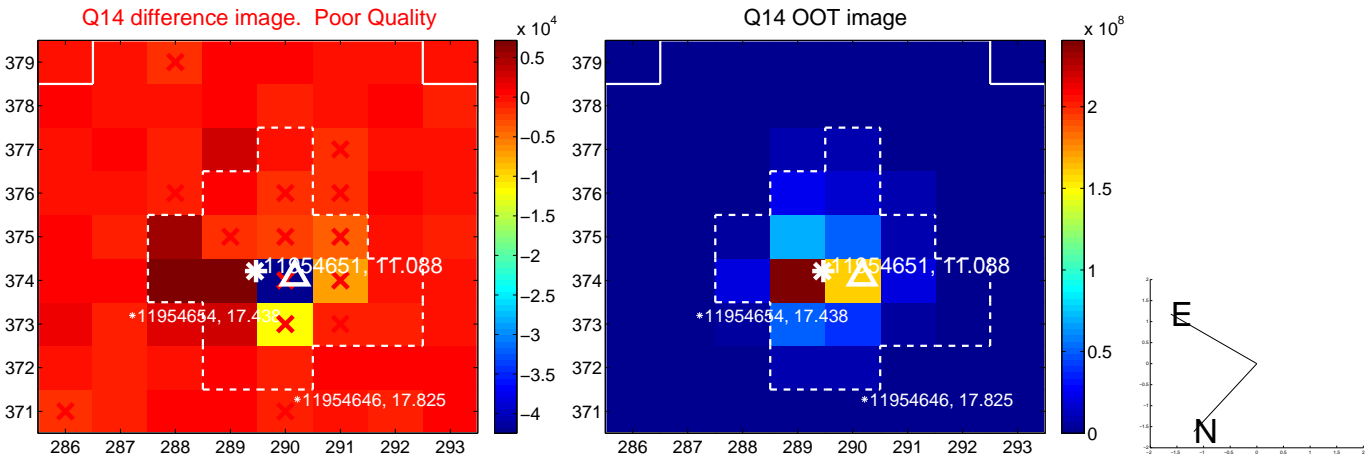
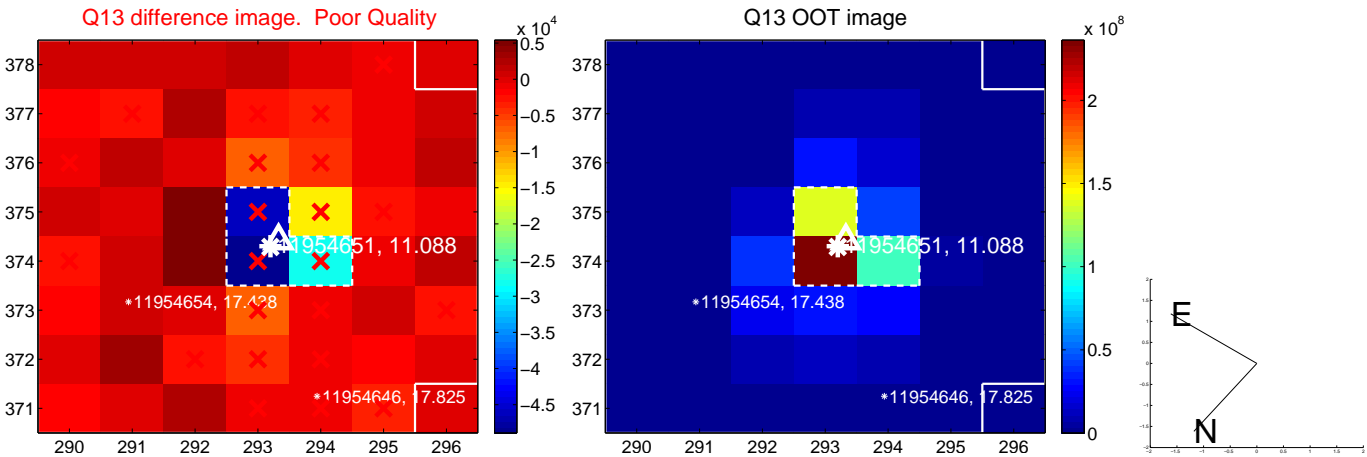
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



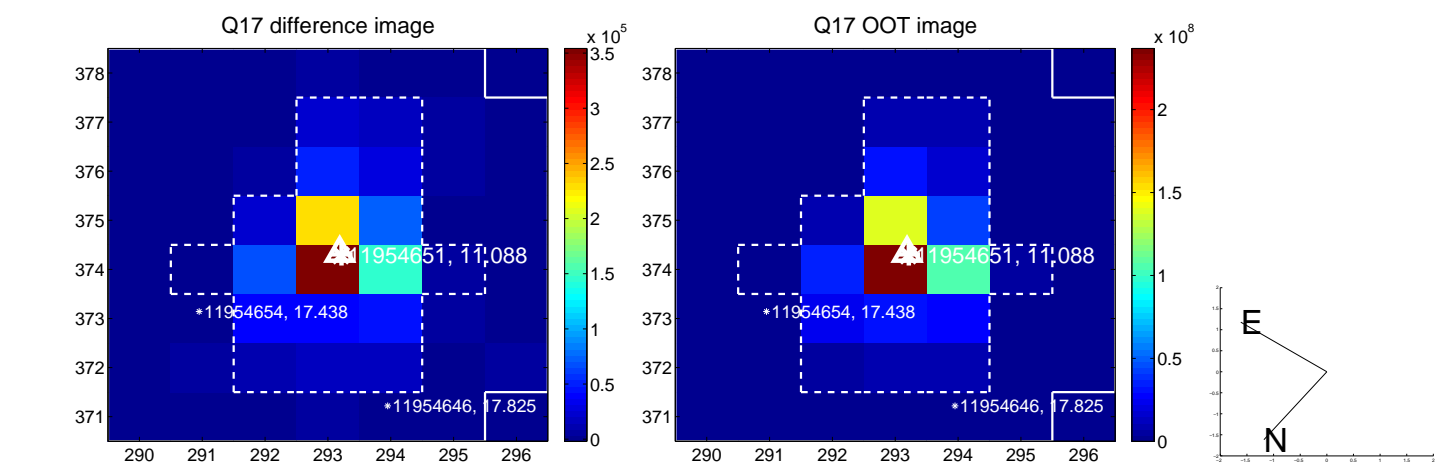
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



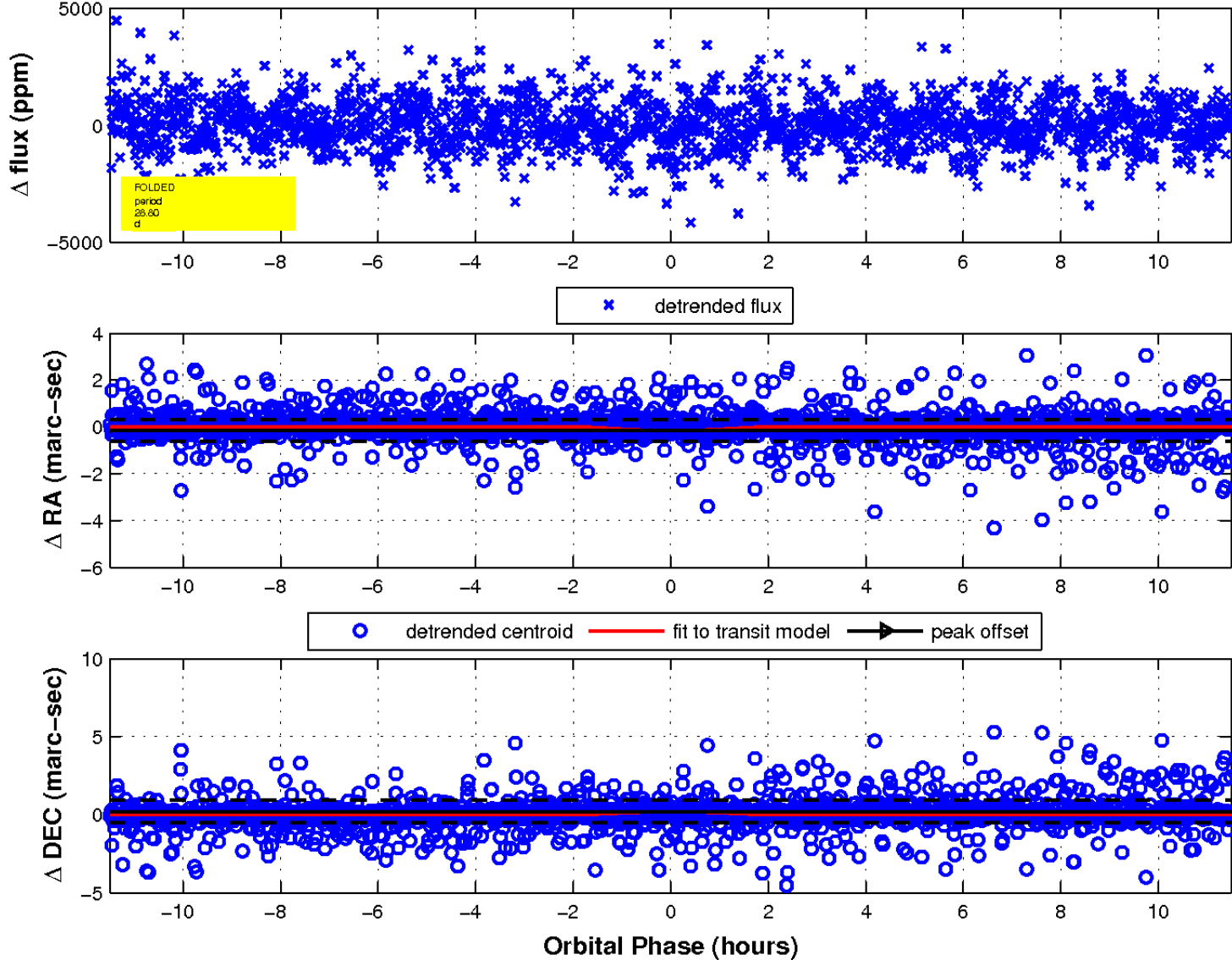
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

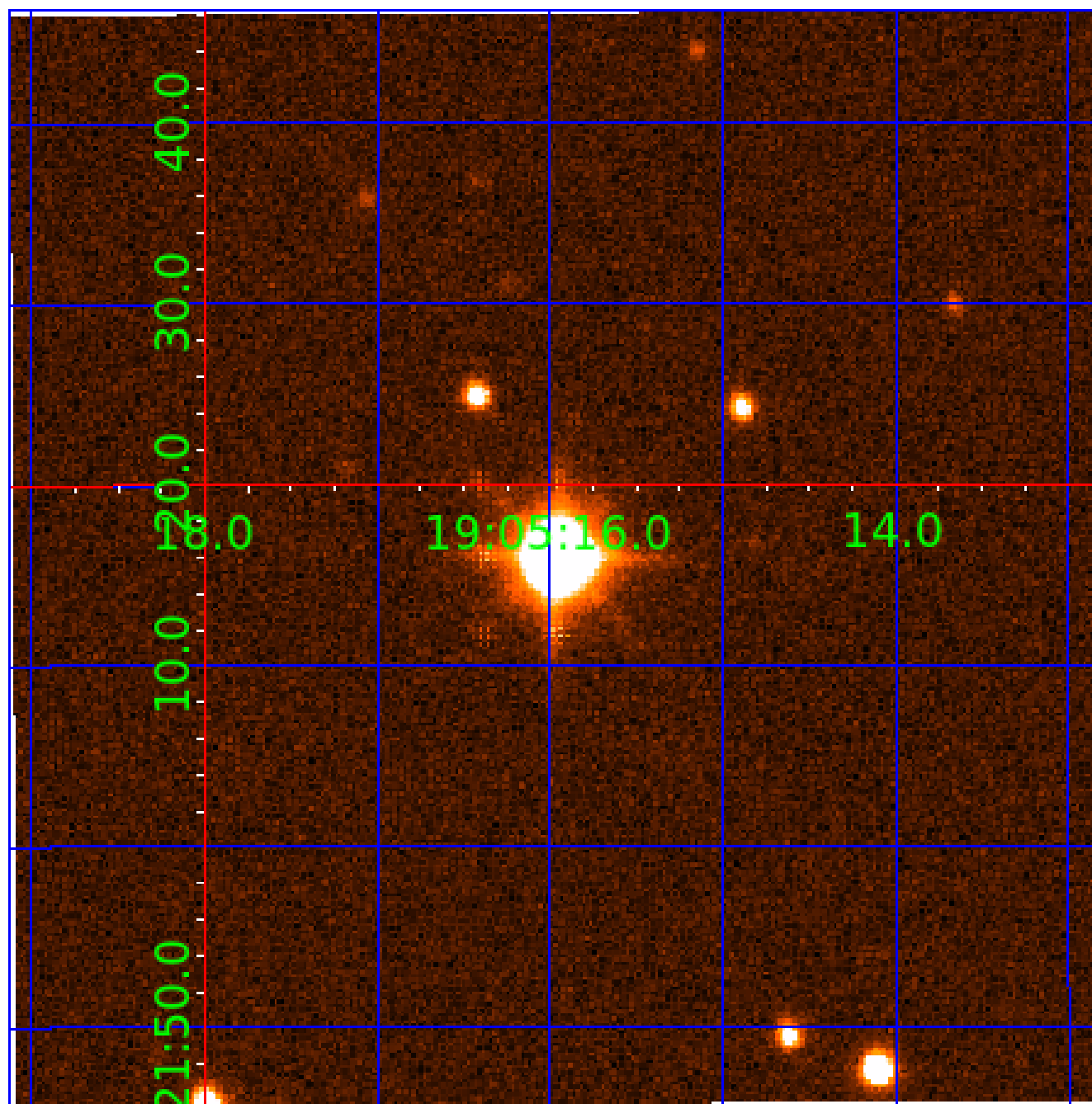


fluxWeightedCentroids, Planet 4 of 8



UKIRT Image

Declination



KIC 011954651

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})
011954651-01	OBS	No	0.700292	132.024552	141.9	3.982	10.3	11.8	1.73	6810	2.39	21675.65
011954651-02	OBS	No	7.200909	133.761875	989.6	8.358	12.9	15.0	1.73	6810	10.09	969.38
011954651-03	OBS	No	7.200587	136.289486	835.7	7.495	11.9	12.9	1.73	6810	6.35	969.44
011954651-04	OBS	No	28.803844	132.031813	1159.9	3.834	8.6	8.2	1.73	6810	9.99	152.67
011954651-05	OBS	No	16.779839	137.982768	703.6	5.791	7.9	8.2	1.73	6810	4.92	313.78
011954651-06	OBS	No	50.409778	173.913015	913.5	3.079	7.7	7.8	1.73	6810	5.88	72.39
011954651-07	OBS	No	41.948088	150.285561	1818.2	2.615	8.2	8.1	1.73	6810	8.28	92.48
011954651-08	OBS	No	51.694463	159.140573	59.9	6.000	7.8	-1.0	1.73	6810	1.35	70.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

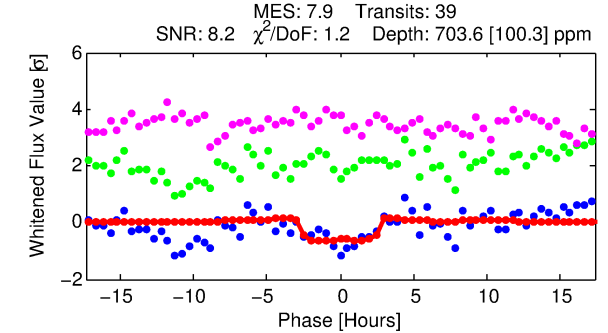
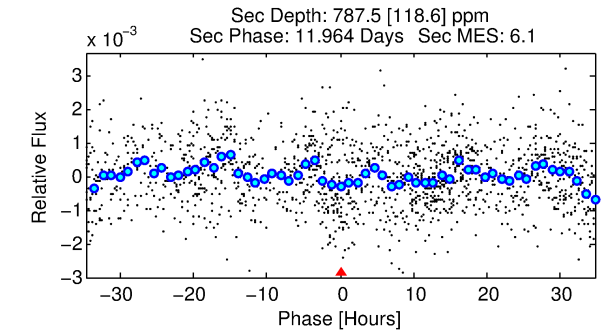
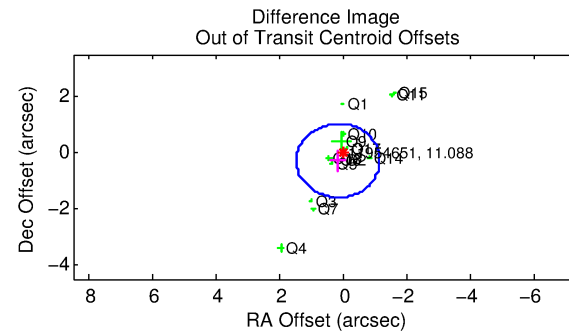
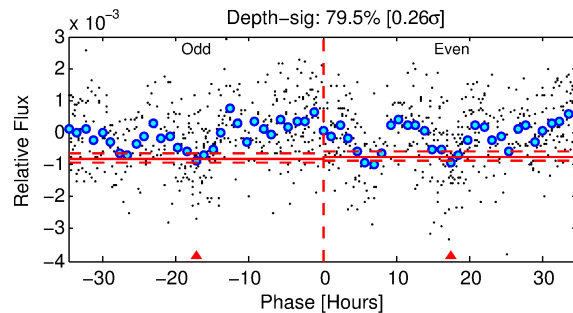
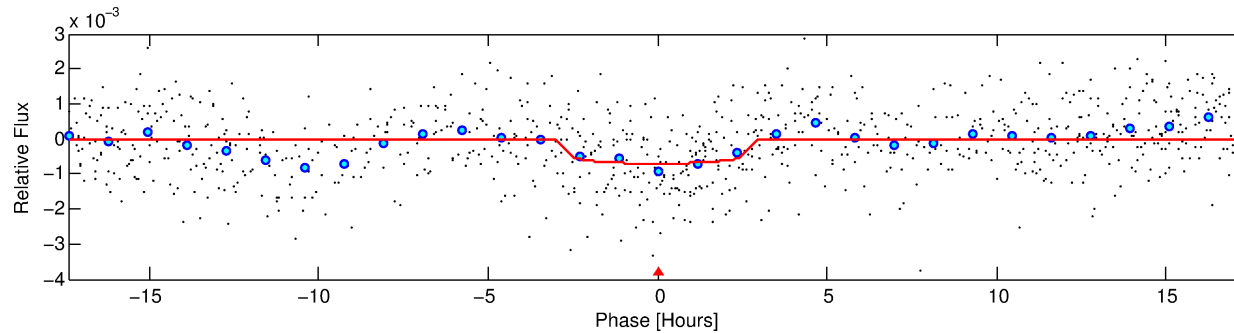
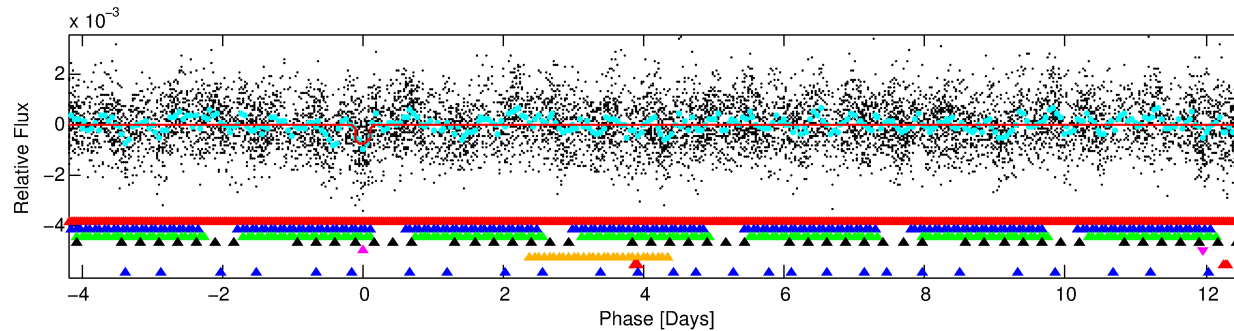
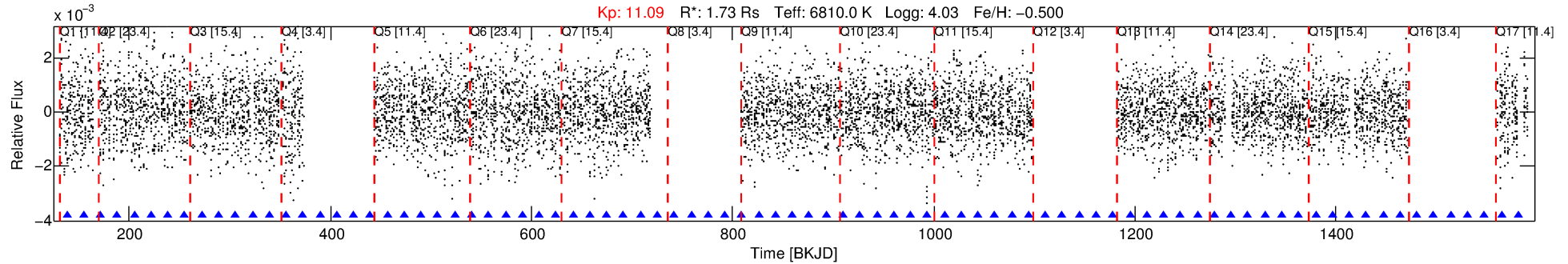
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-05

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 5 of 8 Period: 16.780 d



DV Fit Results:

Period = 16.77984 [0.00030] d
Epoch = 137.9828 [0.0129] BKJD
Rp/R* = 0.0261 [0.0146]
a/R* = 16.44 [51.81]
b = 0.71 [2.23]
Seff = 313.78 [168.33]
Teq = 1073 [144] K
Rp = 4.92 [3.20] Re
a = 0.1353 [0.0432] AU
Ag = 328.15 [406.67] [0.80 σ]
Teffp = 7062 [2016] K [2.96 σ]

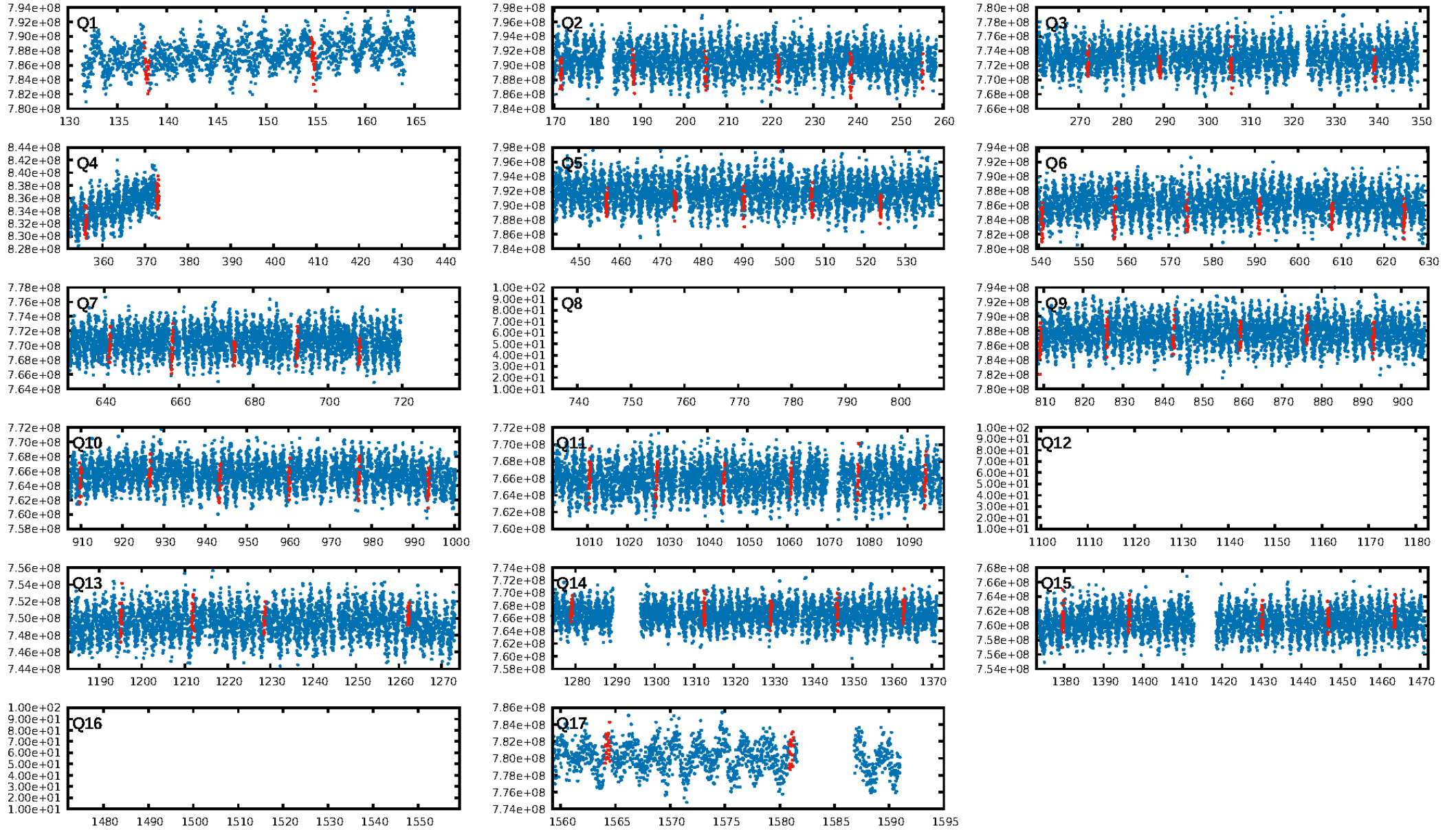
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.61 σ]
LongPeriod-sig: 100.0% [41.55 σ]
ModelChiSquare2-sig: 3.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [36/36]
GhostDiagnostic-chr: 0.2364
Centroid-sig: 24.0%
Centroid-so: 0.119 arcsec [1.64 σ]
OotOffset-rm: 0.333 arcsec [0.76 σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-rm: 0.386 arcsec [0.98 σ]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.00 [0/14]

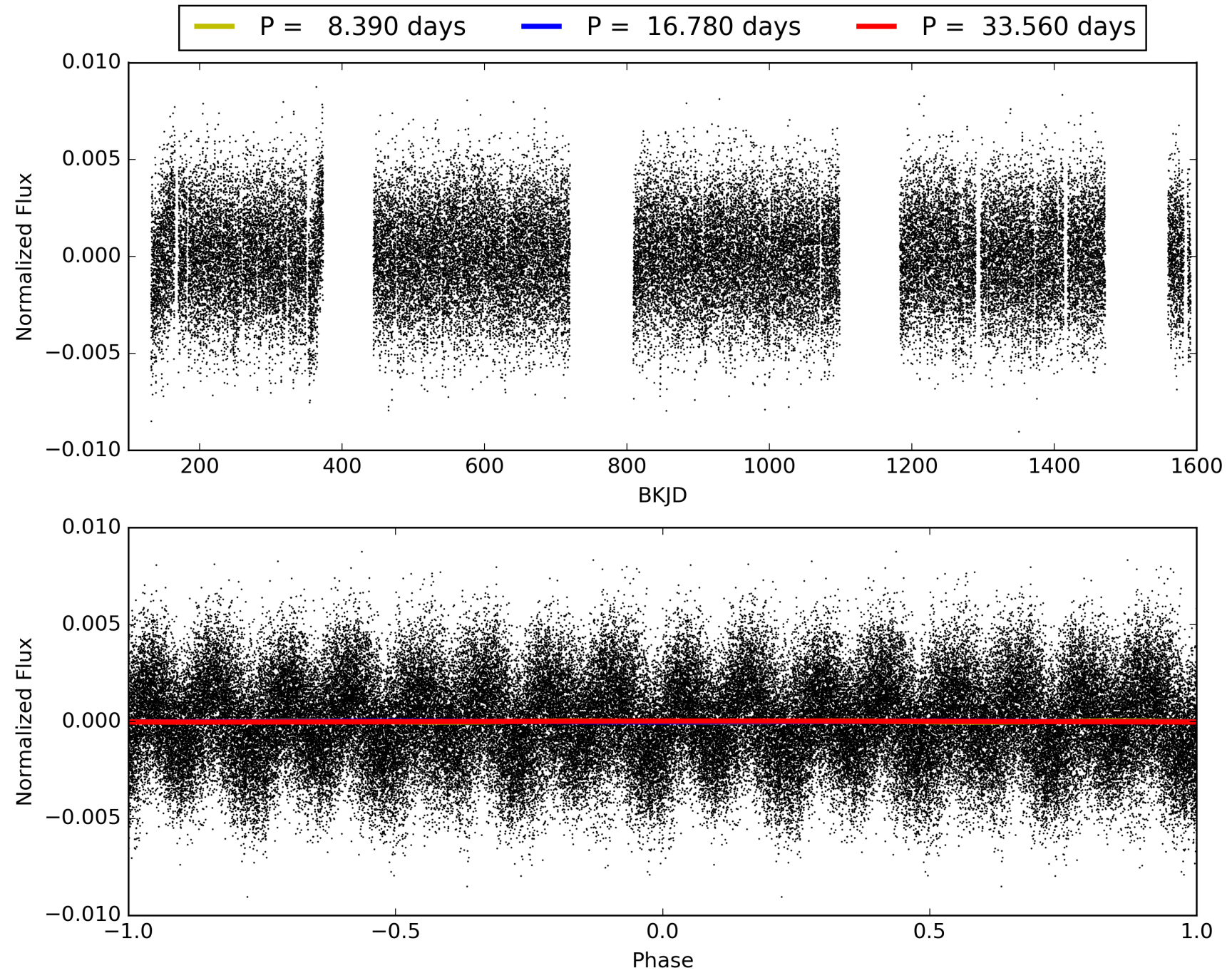
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:18:25 Z

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

TCE 011954651-05, PDC Light Curves

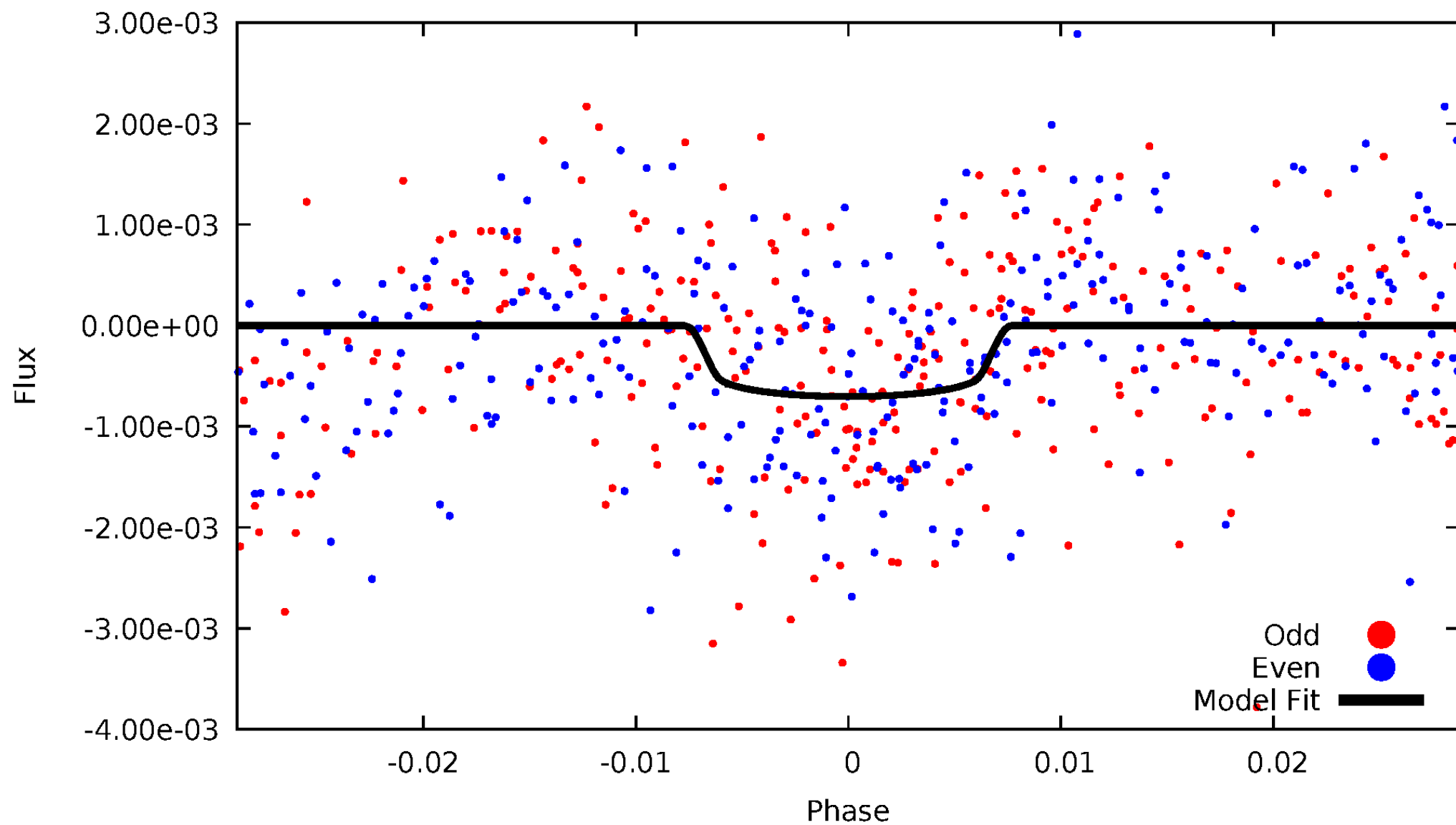


TCE 011954651-05



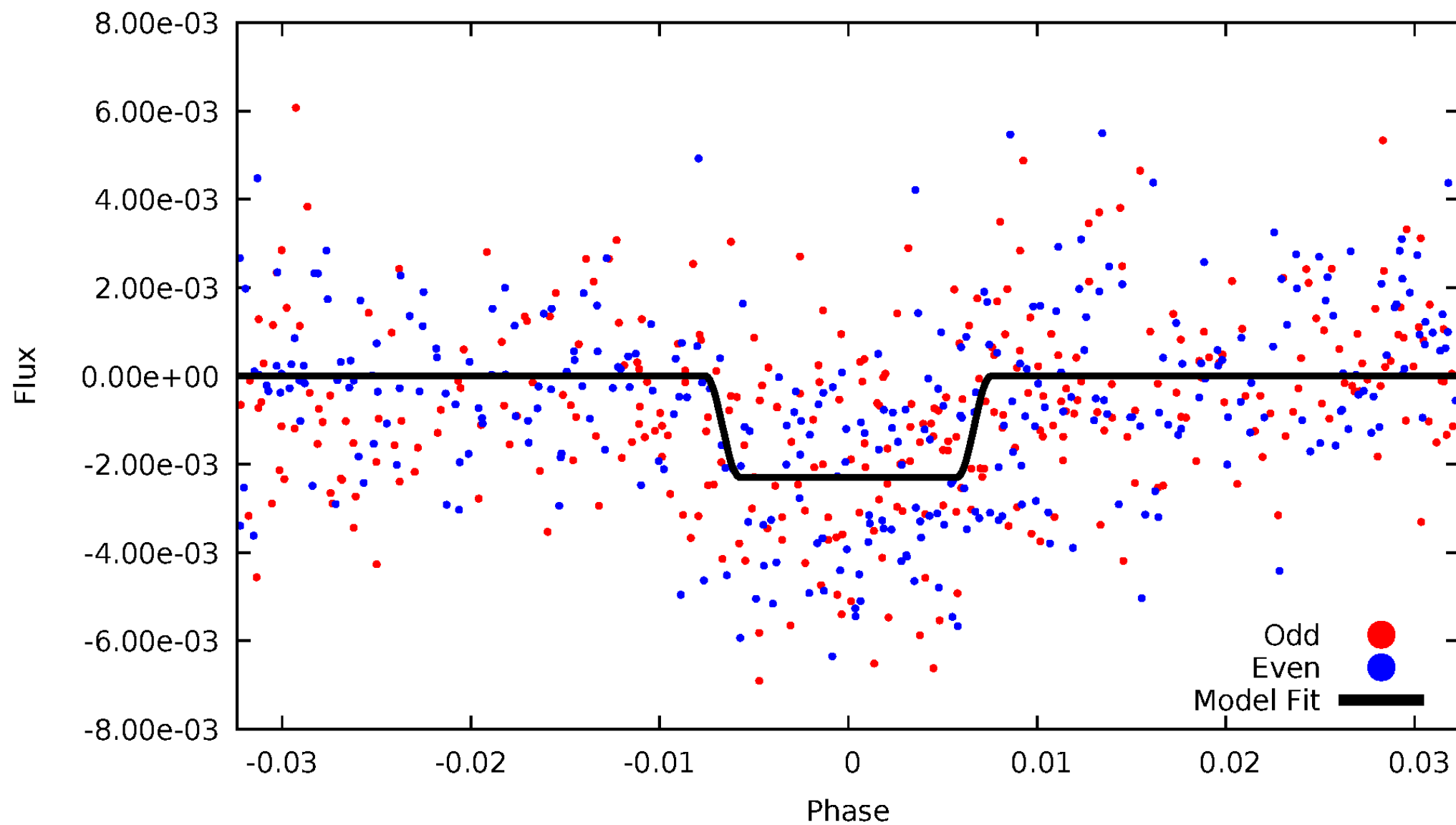
DV Odd/Even

TCE 011954651-05



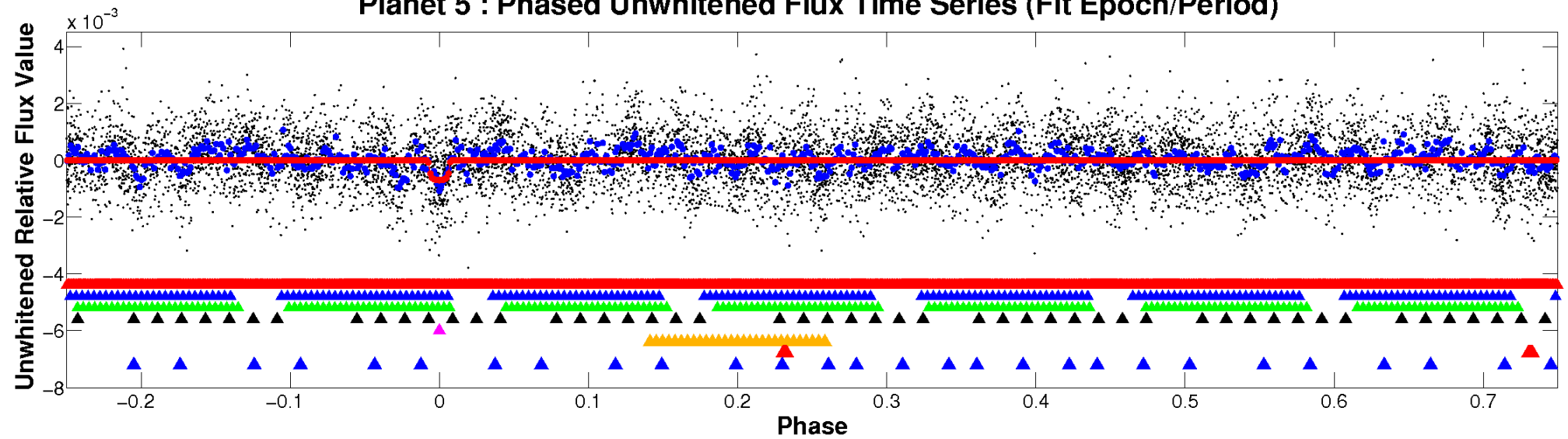
ALT Odd/Even

TCE 011954651-05

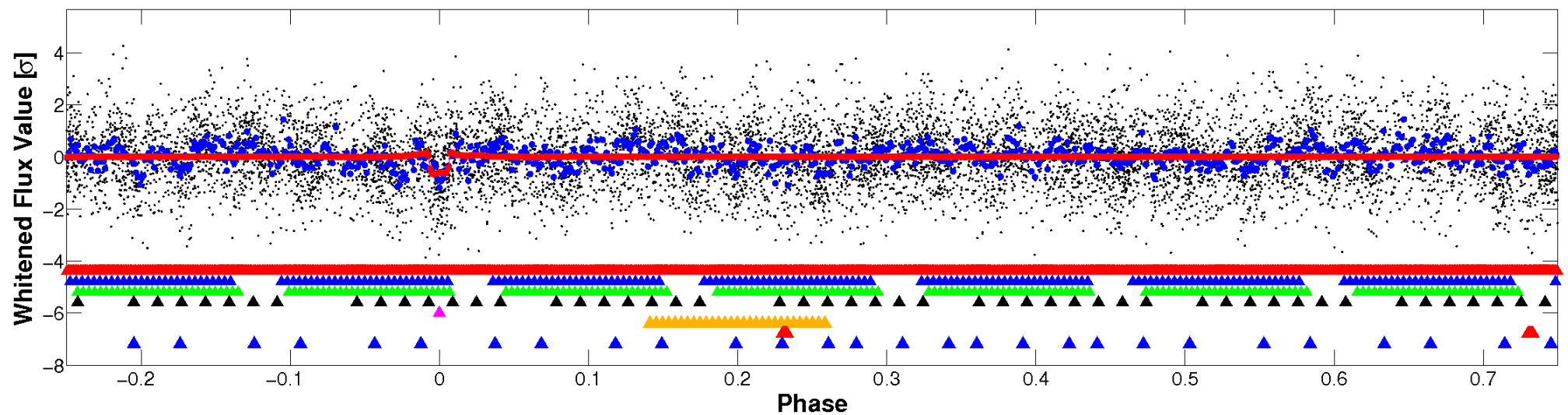


Non-Whitened Vs. Whitened Light Curve

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

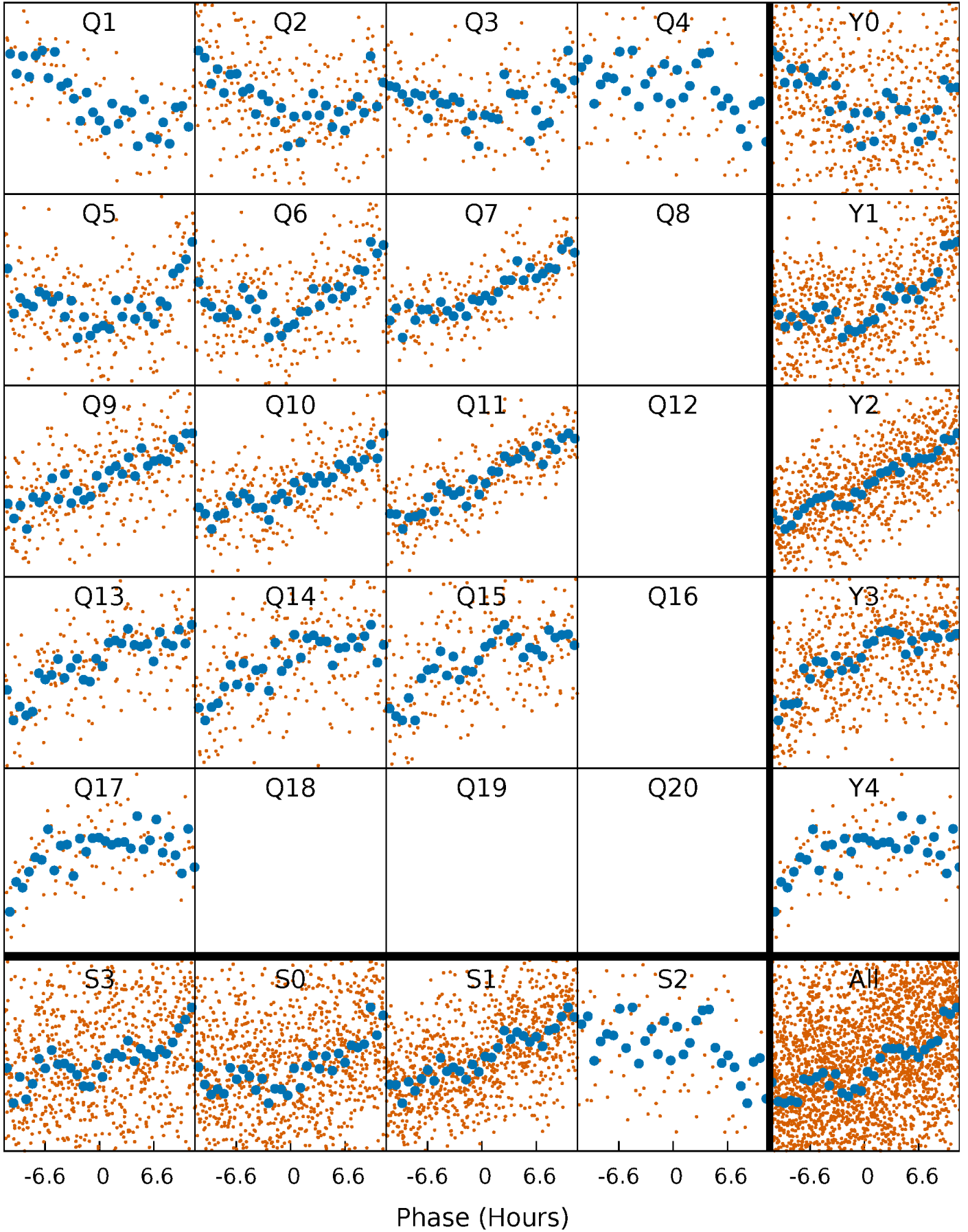


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



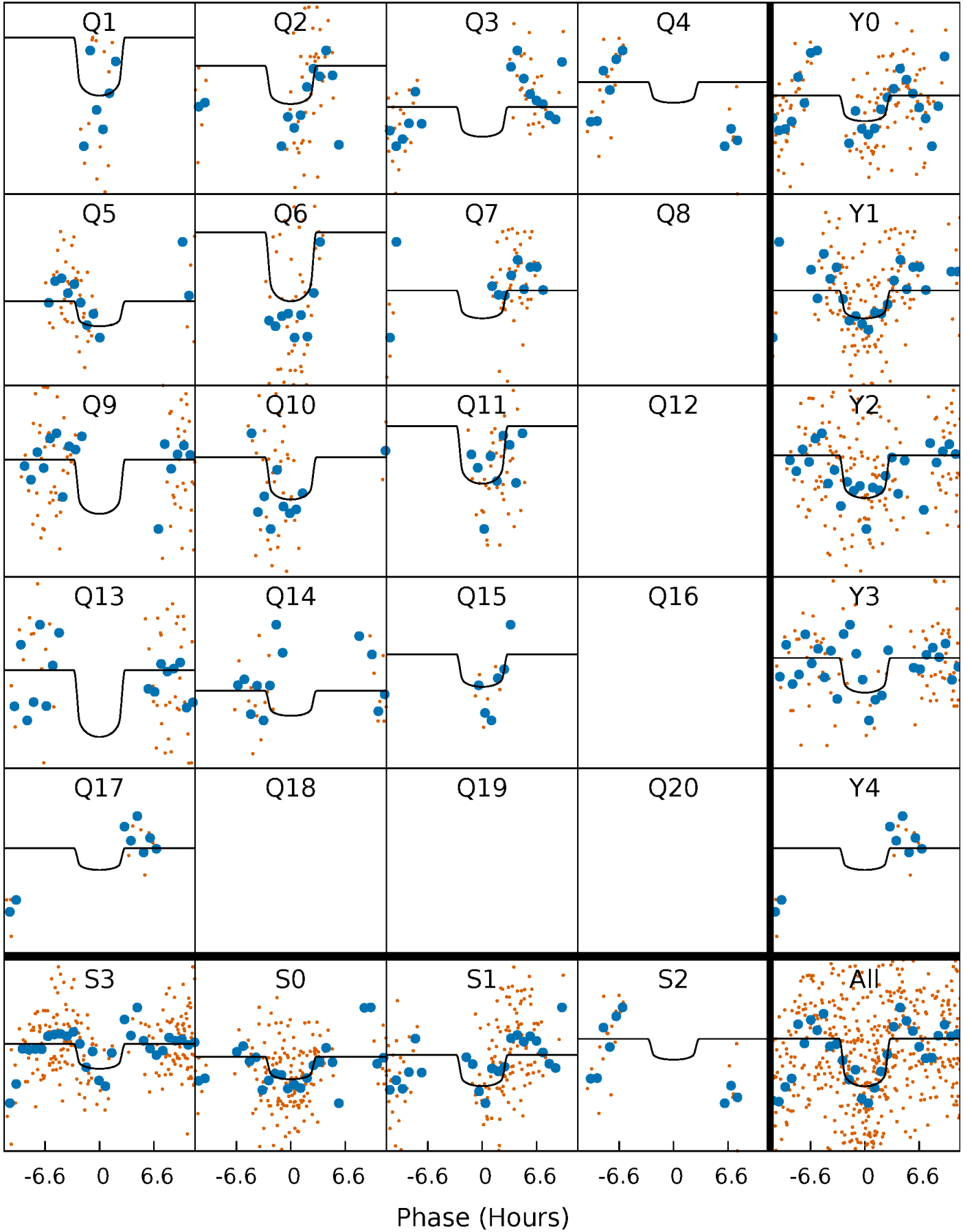
PDC Quarter-Phased Transit Curves

TCE 011954651-05 P= 16.779839 Days $T_0=137.982768$ (BKJD)



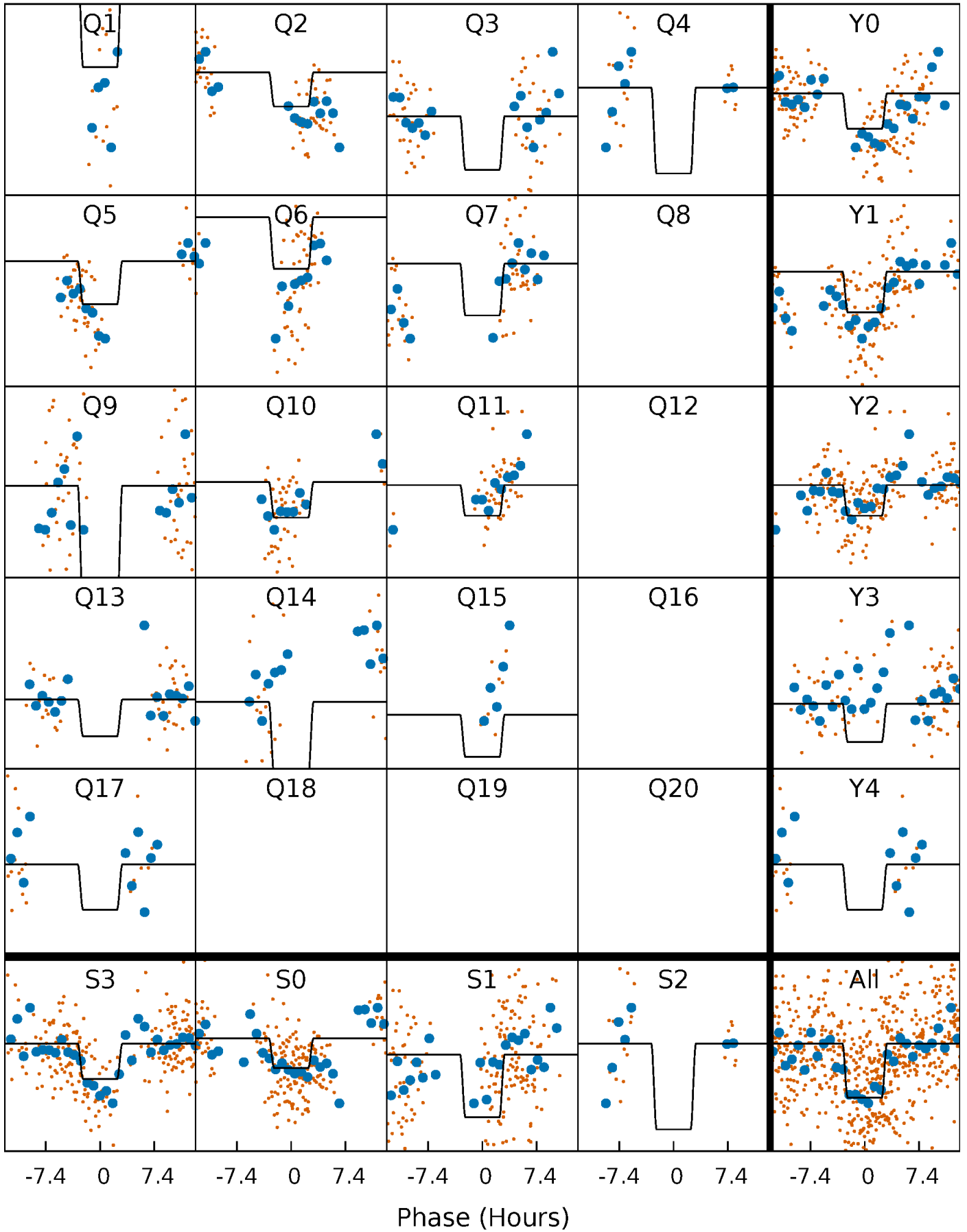
DV Quarter-Phased Transit Curves

TCE 011954651-05 P= 16.779839 Days $T_0=137.982768$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

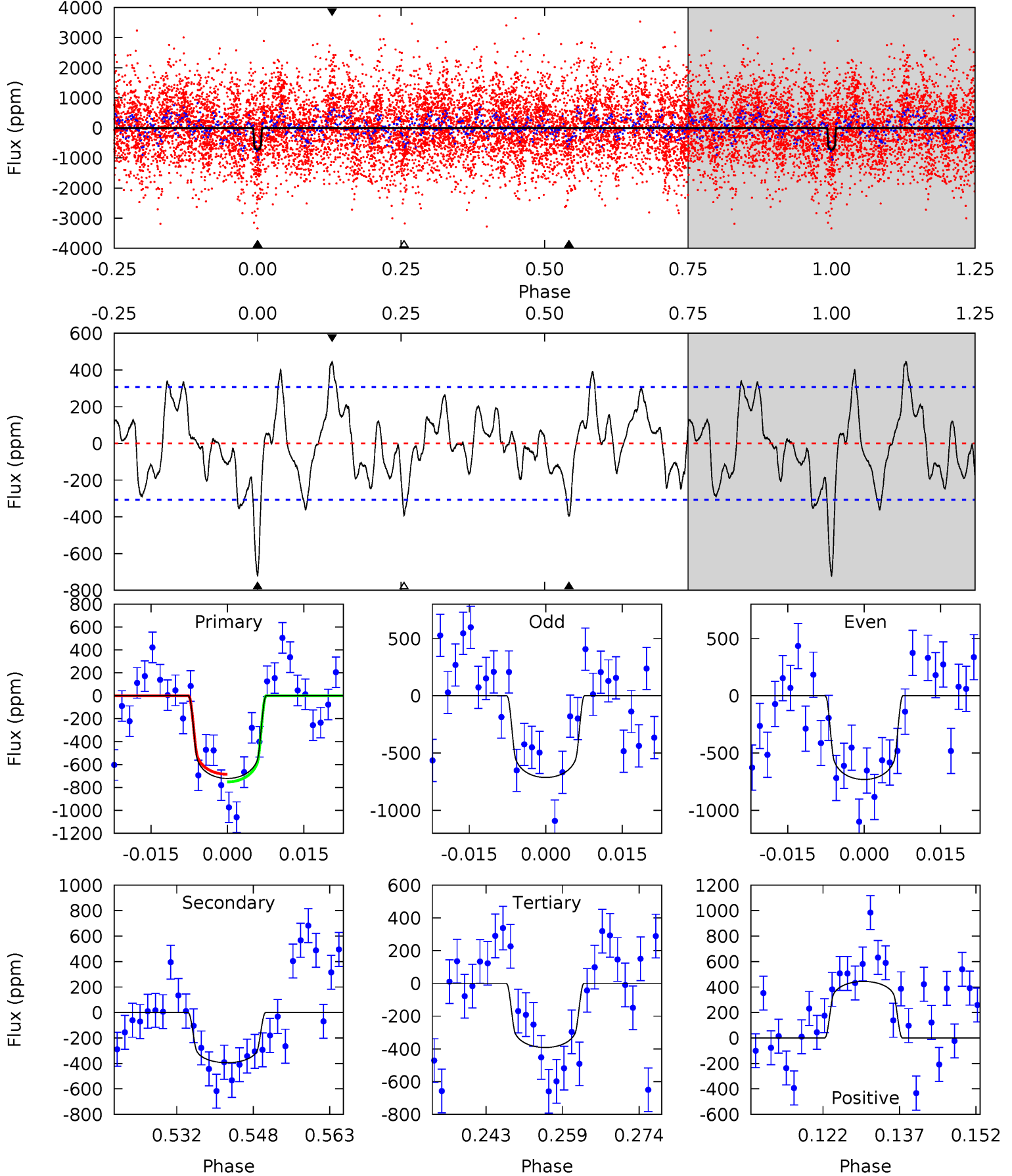
TCE 011954651-05 P= 16.779908 Days $T_0=137.951630$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-05, P = 16.779839 Days, E = 121.202929 Days

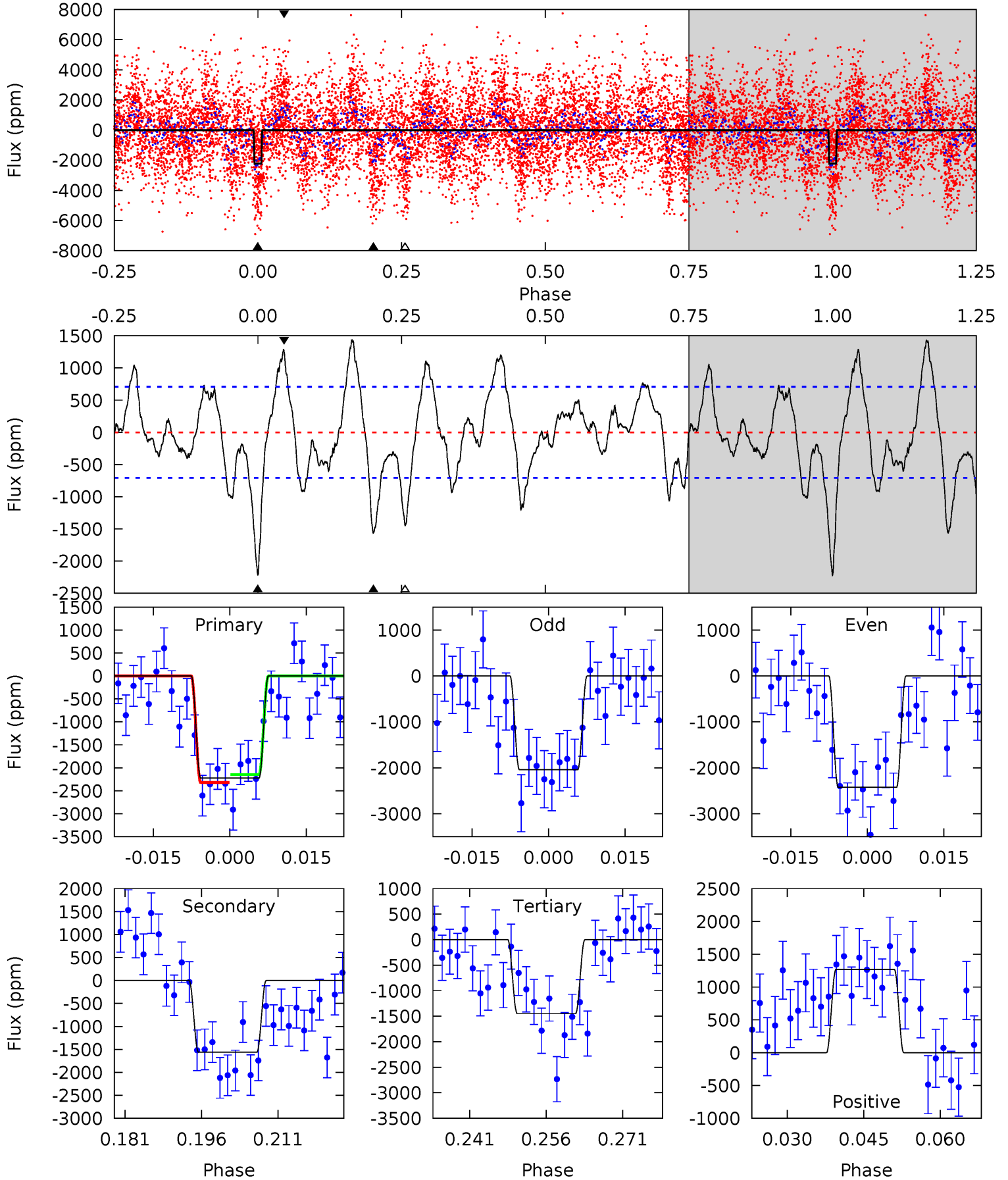
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	6.35	6.31	7.15	4.95	2.43	2.74	5.32	4.48	0.04	-0.80	0.14	0.79	0.38	0.53



Alt Model-Shift Uniqueness Test

011954651-05, P = 16.779908 Days, E = 121.171722 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	10.9	10.1	8.86	4.95	2.43	4.15	5.40	6.67	0.79	2.05	1.34	0.88	0.39	0.59



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-394 ± 62	$4.72^{+2.95}_{-2.49}$	1476^{+122}_{-141}	5884^{+2926}_{-1043}	176^{+623}_{-108}
Alt.	-1563 ± 143	$8.60^{+3.40}_{-2.90}$	1478^{+117}_{-136}	6161^{+1366}_{-757}	216^{+272}_{-105}

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 $A_{obs} \gg 1.0$

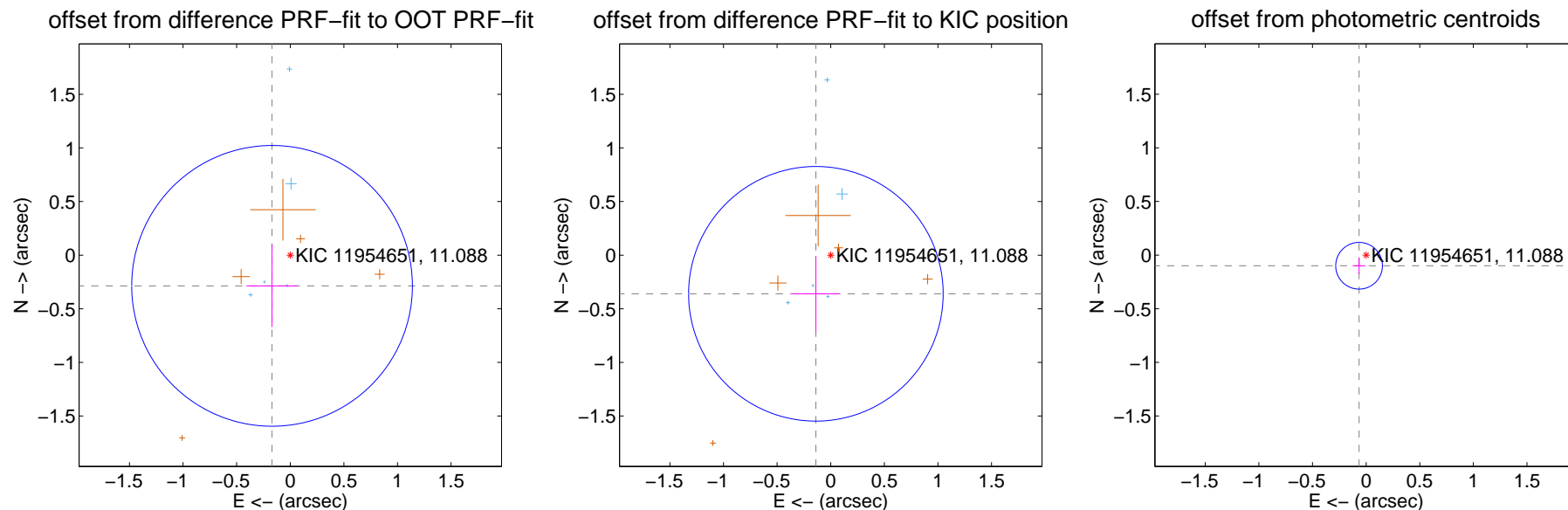
DV Centroid Data

Supplemental centroid analysis for 011954651-05. **Kepler magnitude: 11.09.** Transit SNR 8.21

There are 6 quarters with good PRF difference image offsets

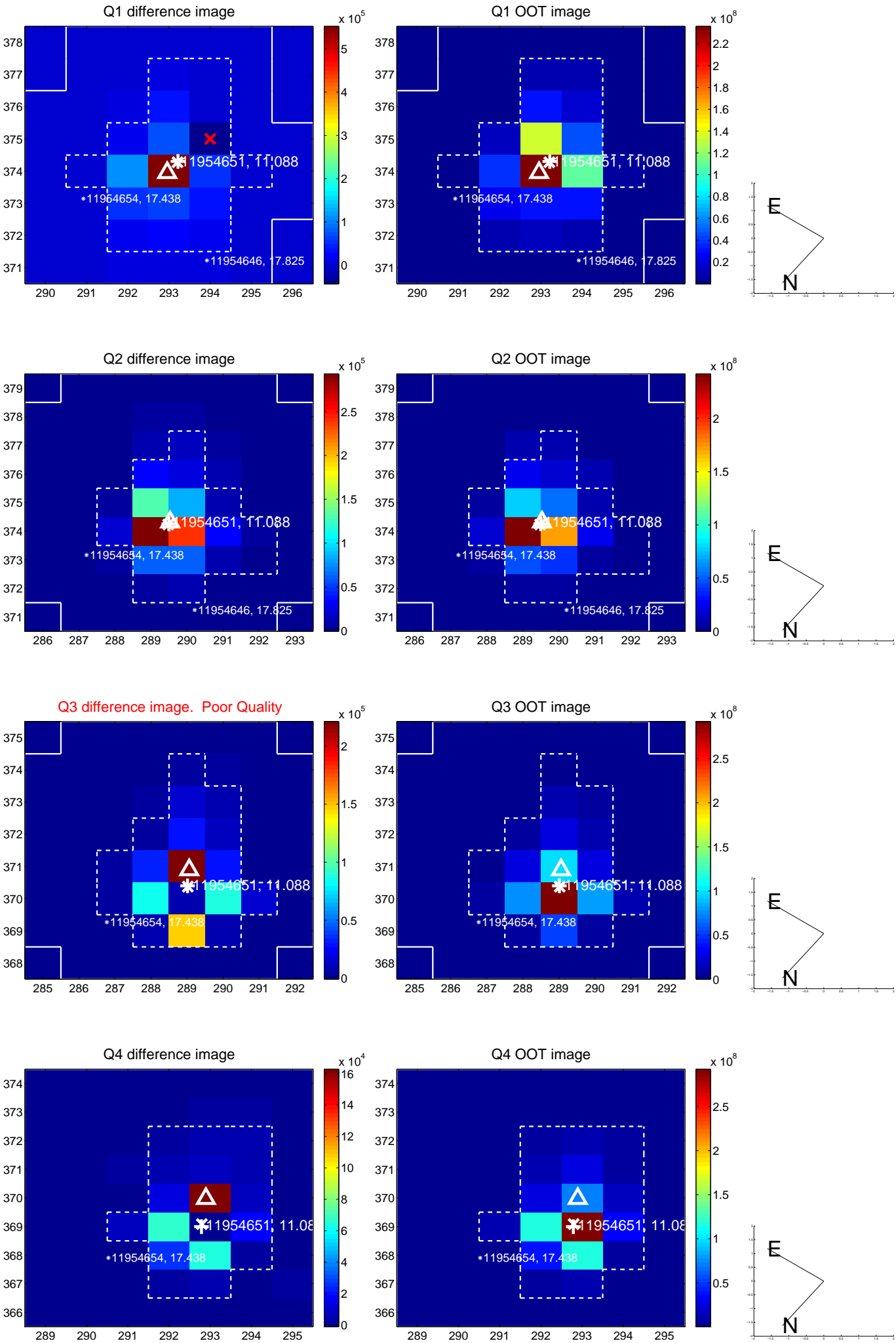
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.333 ± 0.436	0.76	0.170 ± 0.239	-0.286 ± 0.384
PRF-fit source offset from KIC position	0.386 ± 0.396	0.98	0.138 ± 0.221	-0.361 ± 0.353
photometric centroid source offset	0.12 ± 0.07	1.64	0.07 ± 0.06	-0.10 ± 0.08

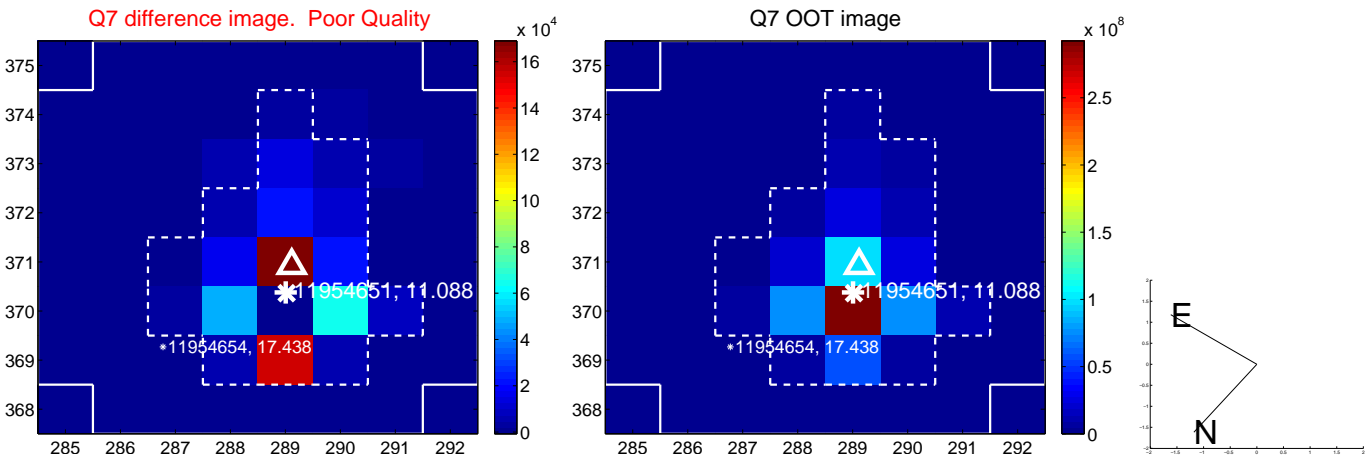
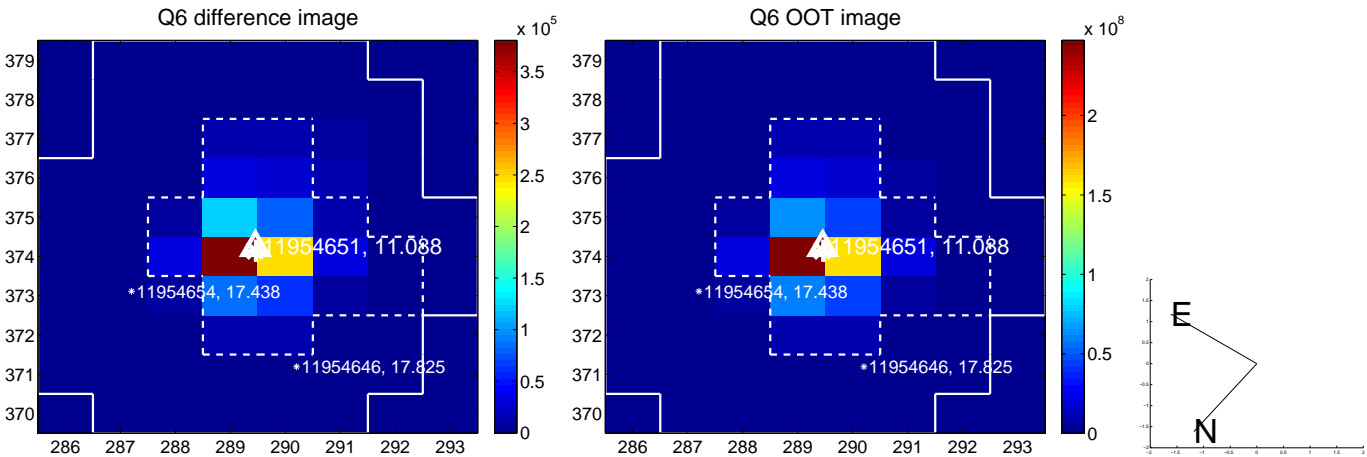
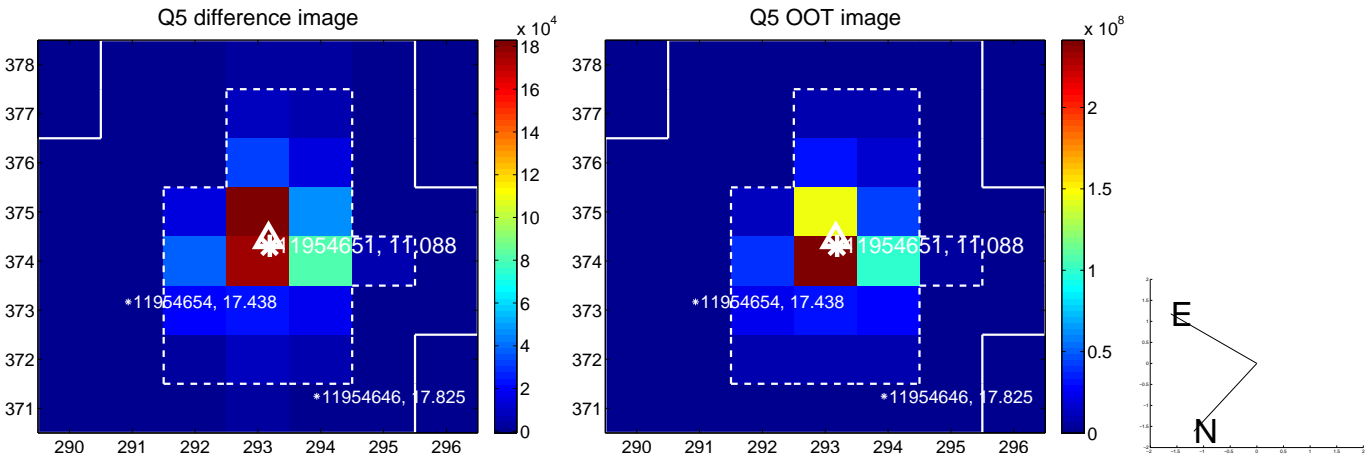


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

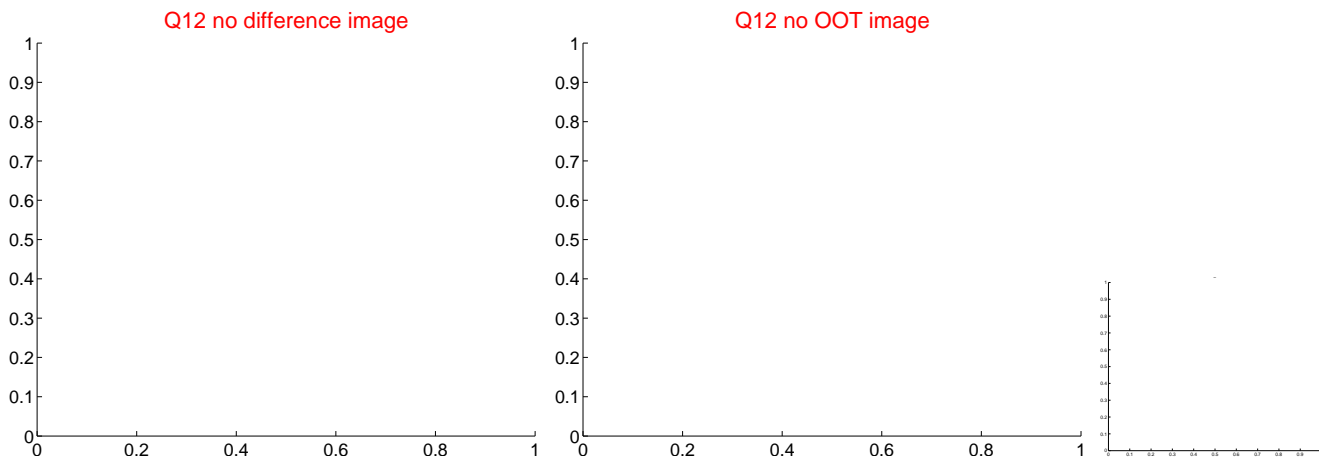
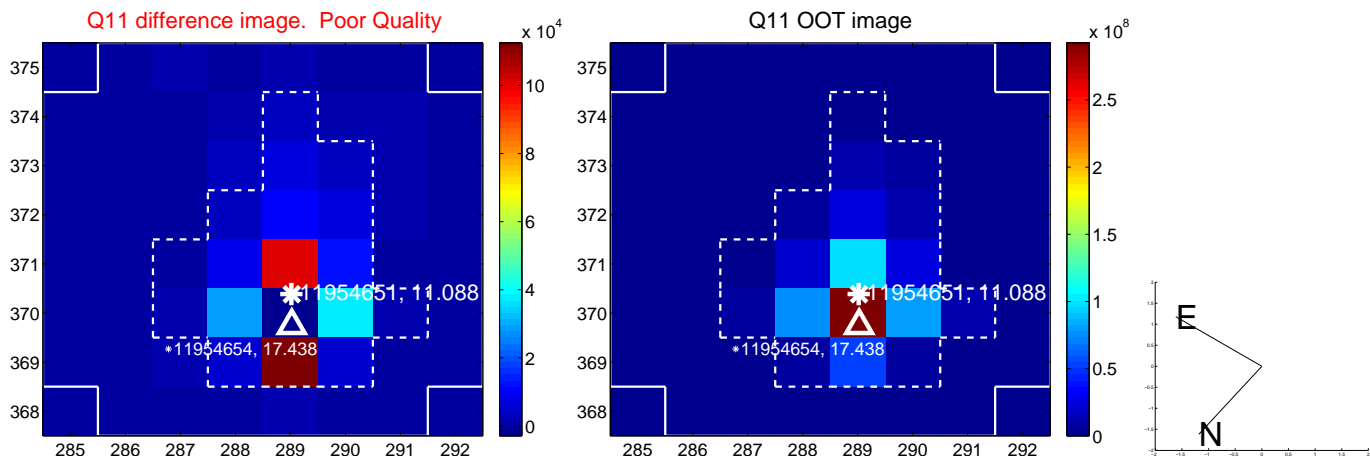
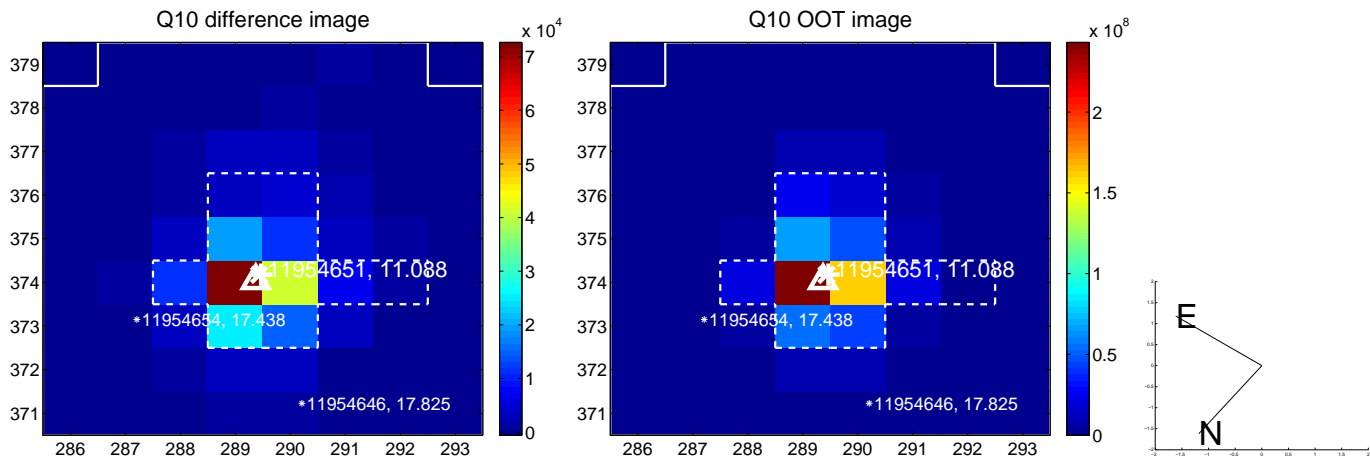
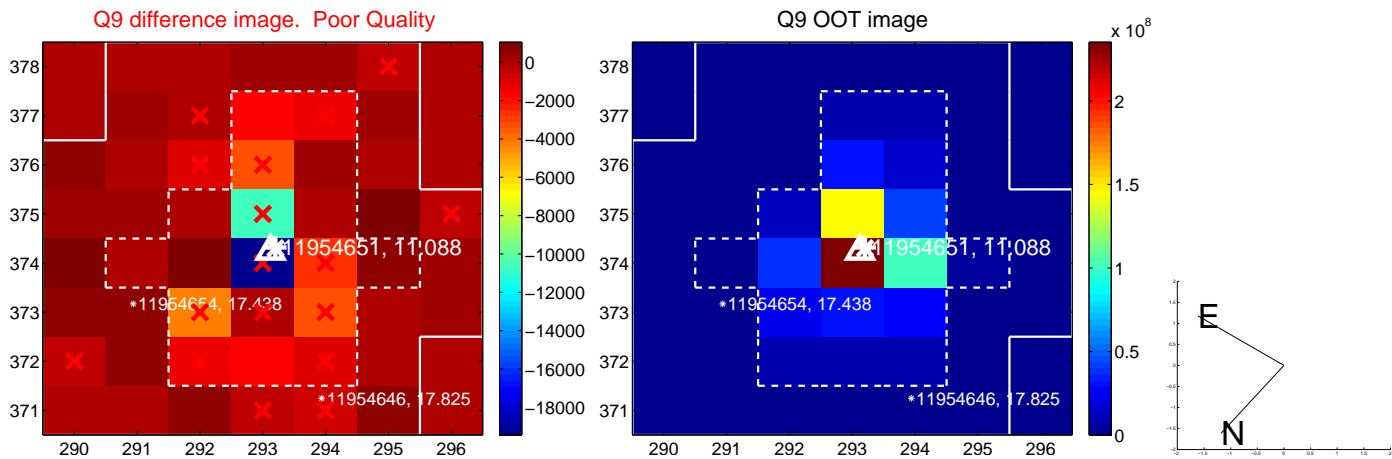
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



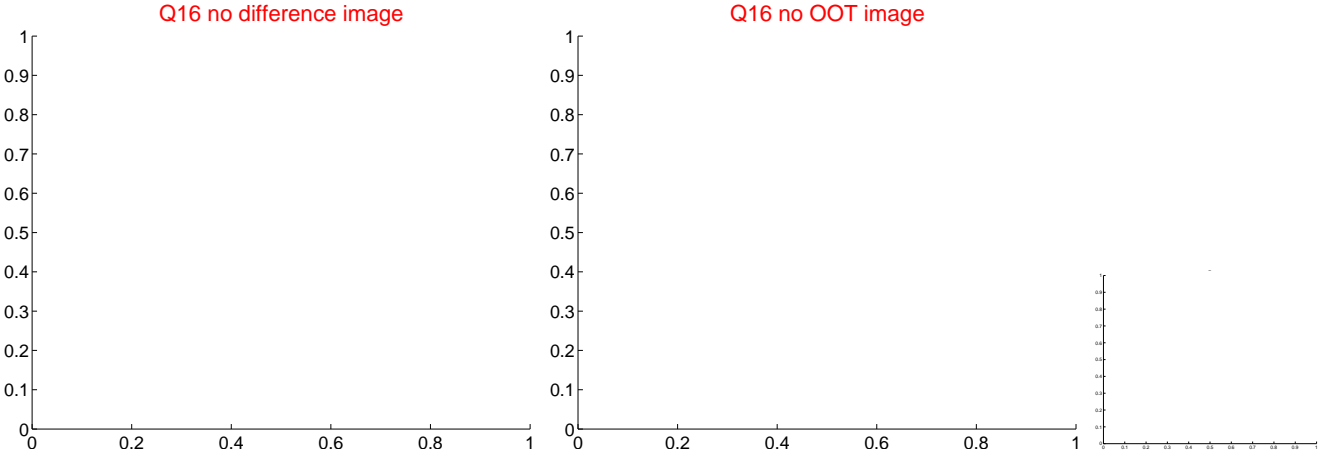
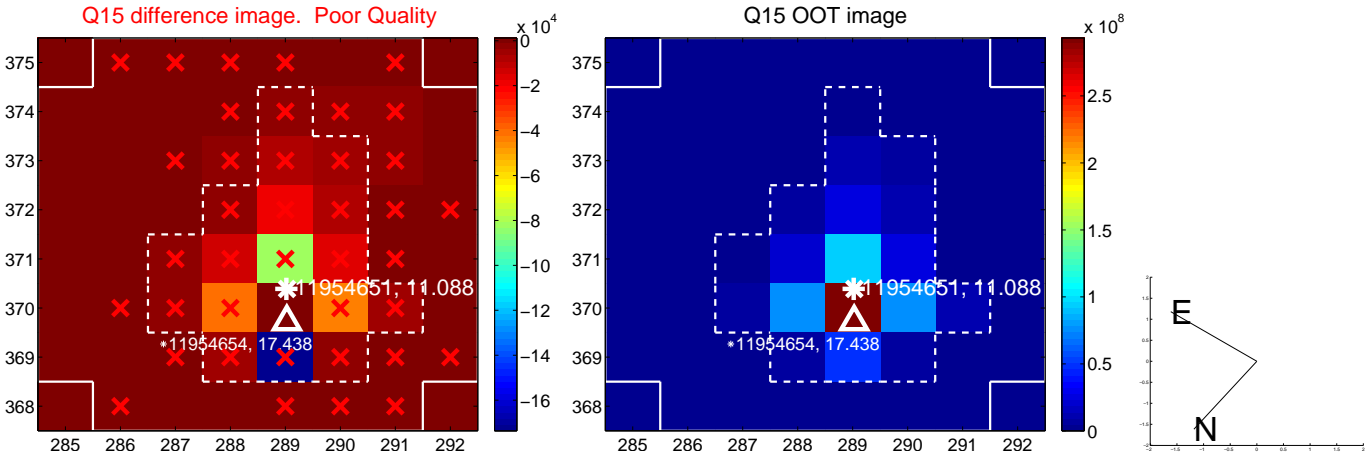
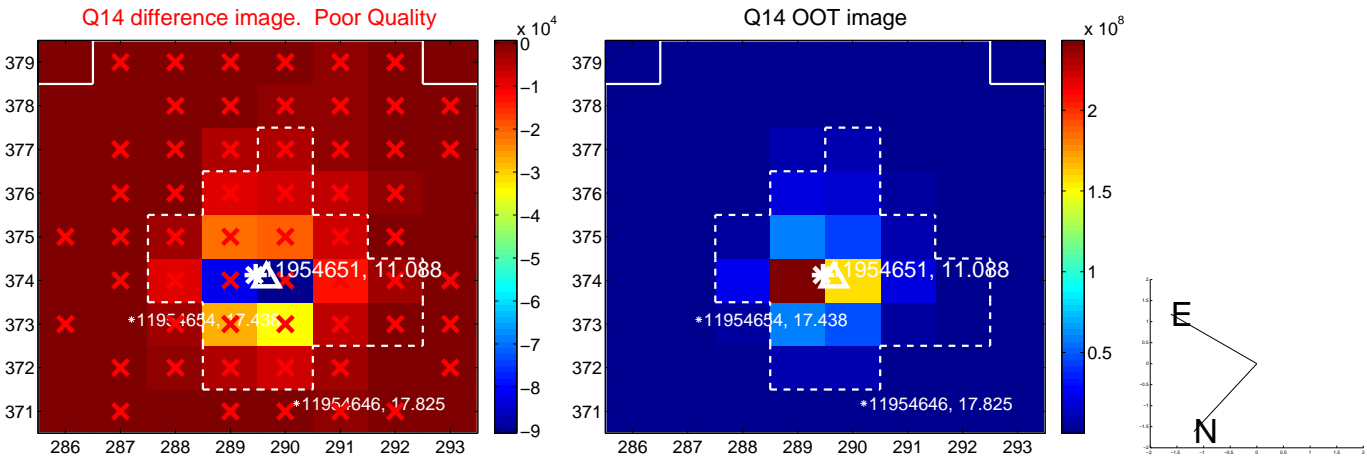
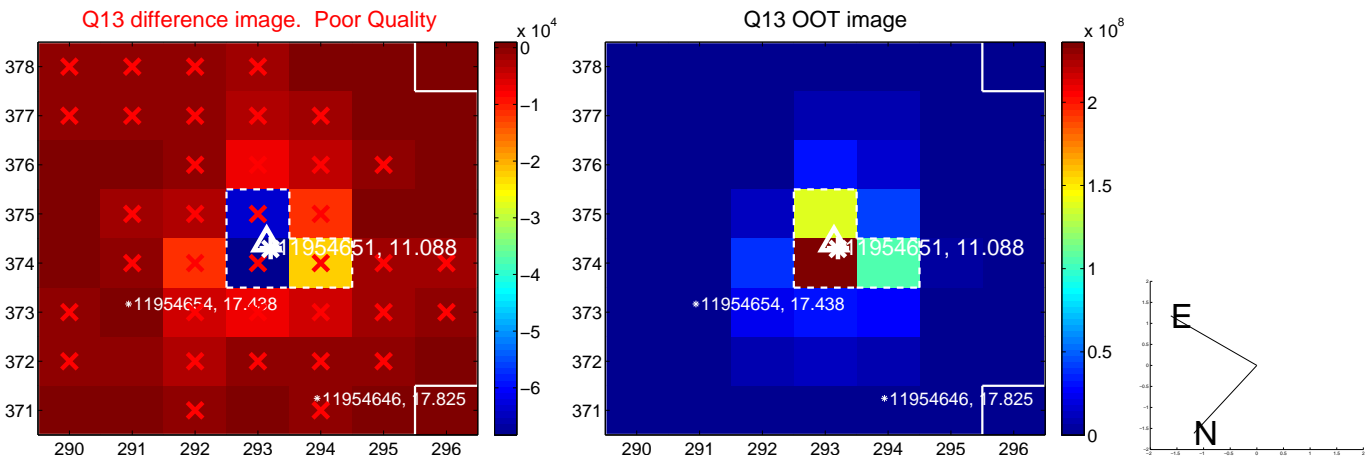
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



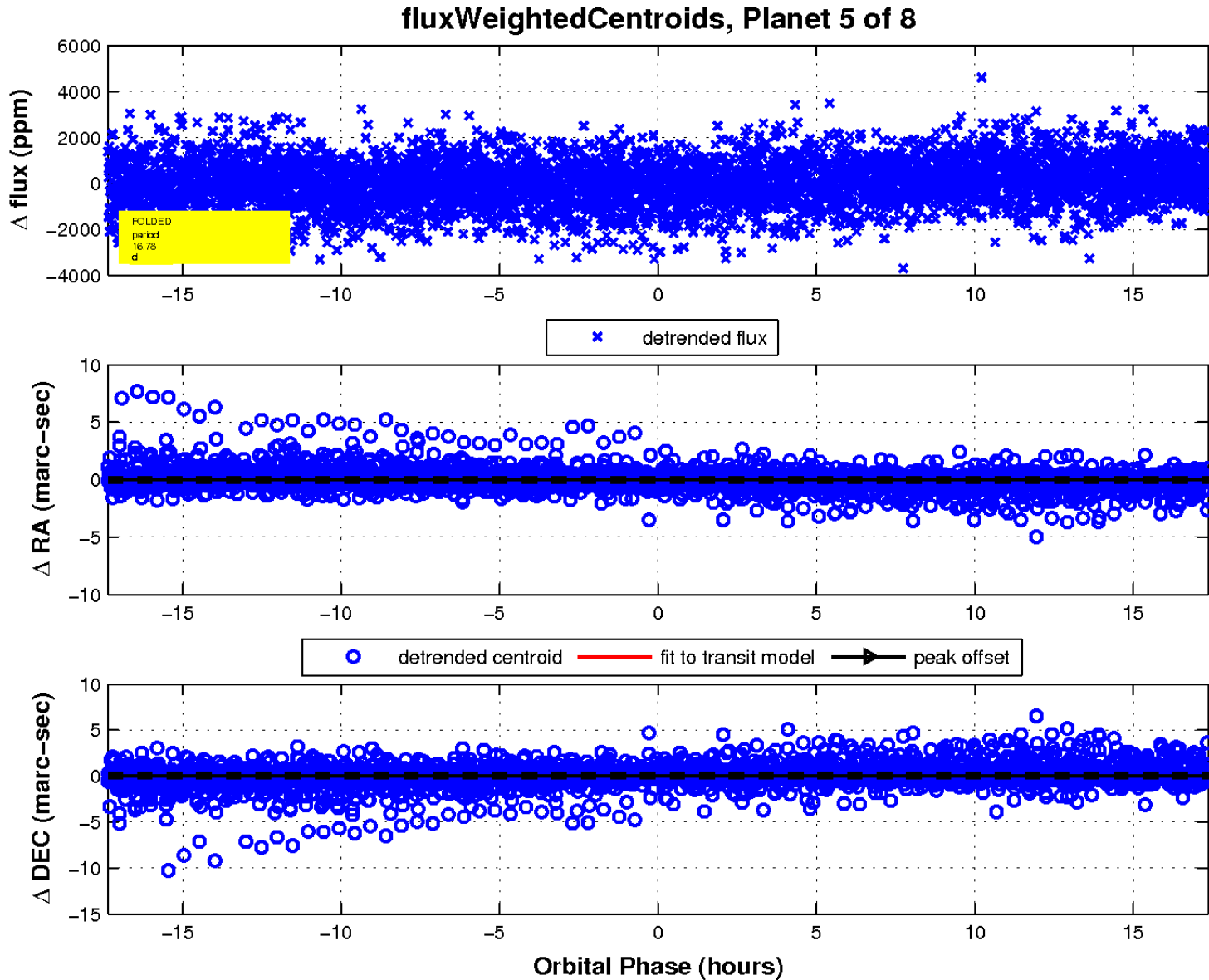
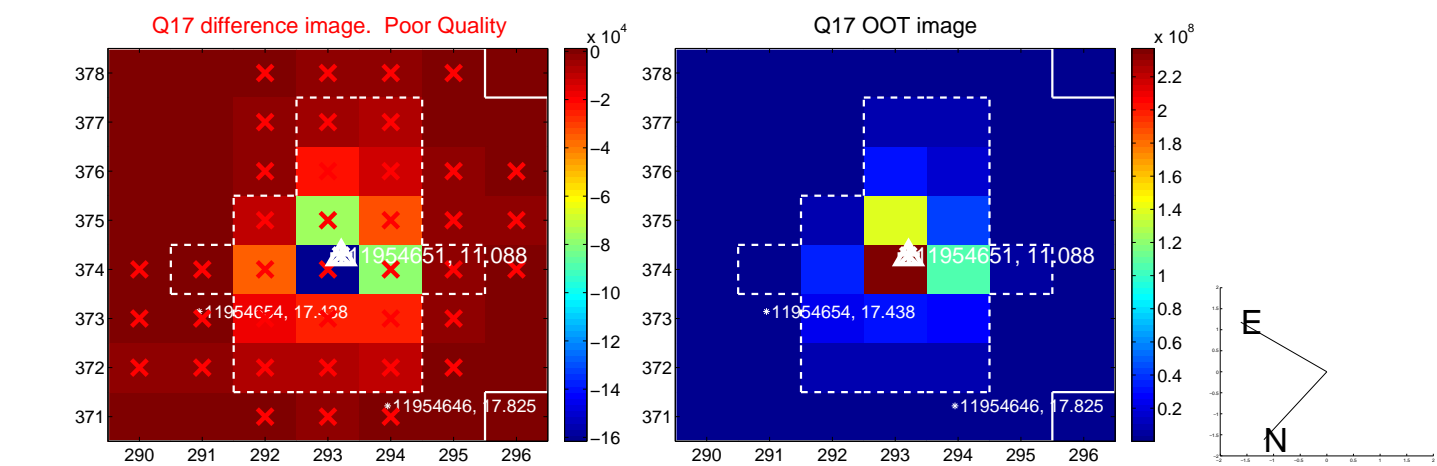
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

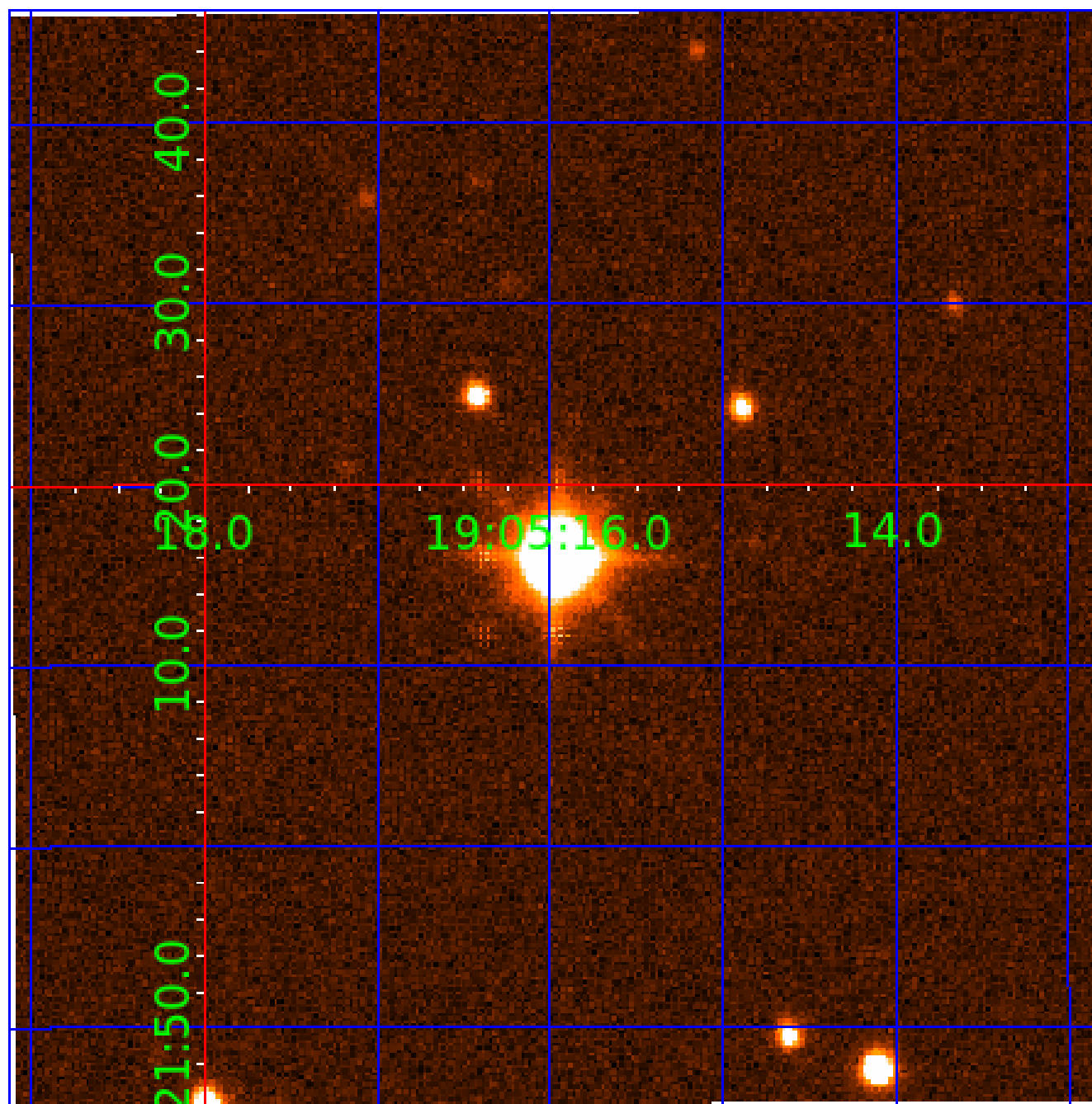


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011954651

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})
011954651-01	OBS	No	0.700292	132.024552	141.9	3.982	10.3	11.8	1.73	6810	2.39	21675.65
011954651-02	OBS	No	7.200909	133.761875	989.6	8.358	12.9	15.0	1.73	6810	10.09	969.38
011954651-03	OBS	No	7.200587	136.289486	835.7	7.495	11.9	12.9	1.73	6810	6.35	969.44
011954651-04	OBS	No	28.803844	132.031813	1159.9	3.834	8.6	8.2	1.73	6810	9.99	152.67
011954651-05	OBS	No	16.779839	137.982768	703.6	5.791	7.9	8.2	1.73	6810	4.92	313.78
011954651-06	OBS	No	50.409778	173.913015	913.5	3.079	7.7	7.8	1.73	6810	5.88	72.39
011954651-07	OBS	No	41.948088	150.285561	1818.2	2.615	8.2	8.1	1.73	6810	8.28	92.48
011954651-08	OBS	No	51.694463	159.140573	59.9	6.000	7.8	-1.0	1.73	6810	1.35	70.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

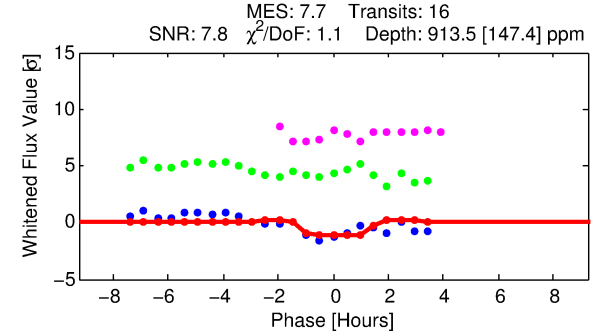
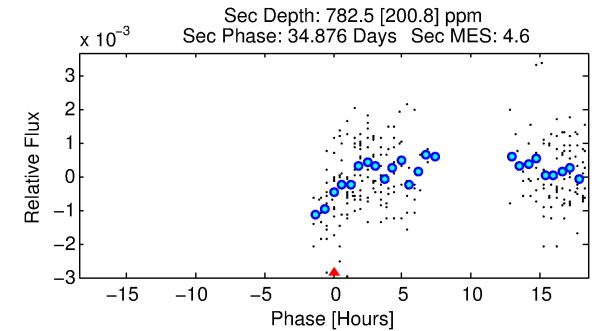
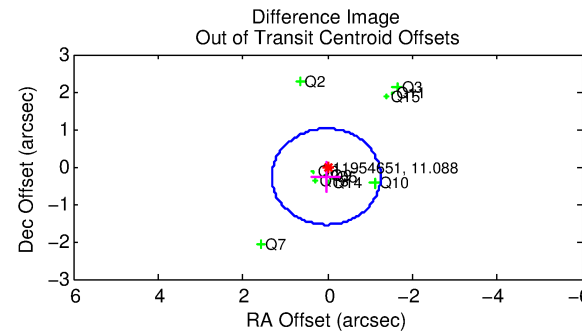
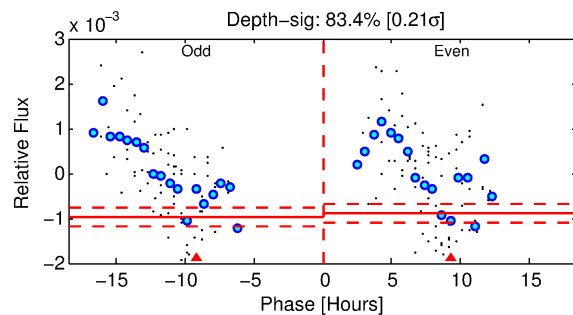
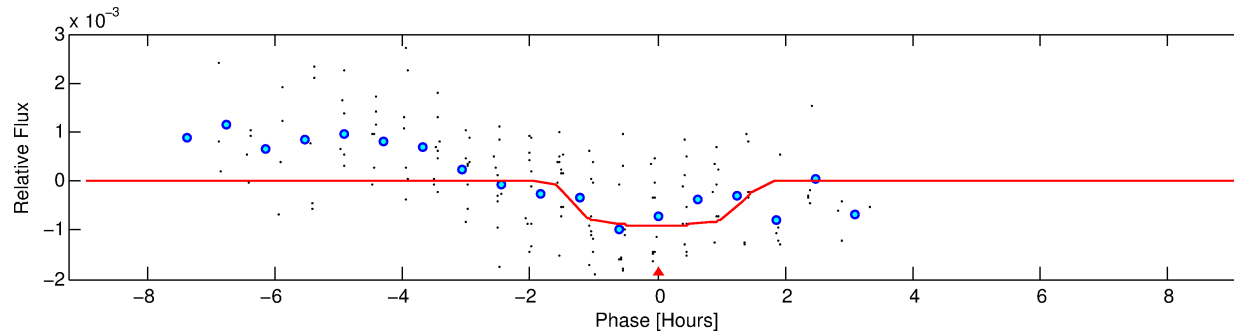
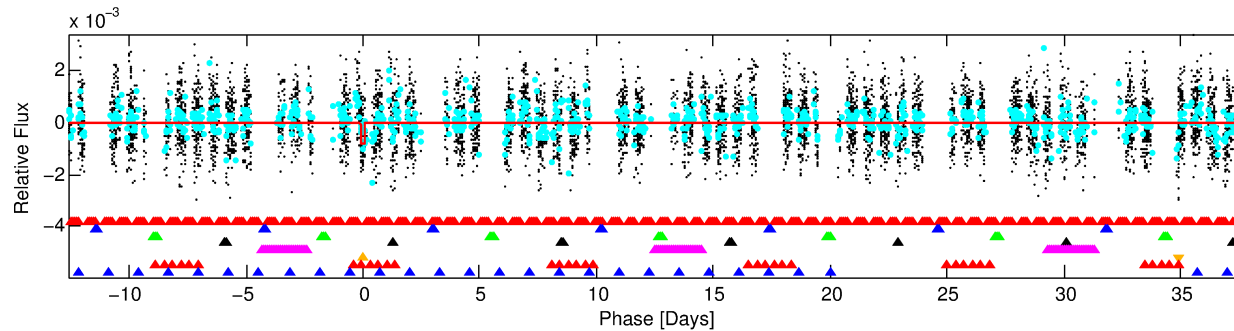
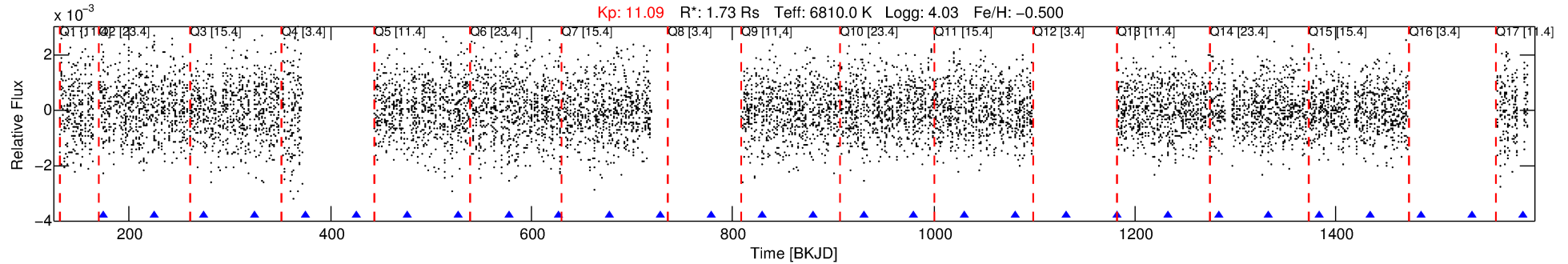
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-06

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 6 of 8 Period: 50.410 d



DV Fit Results:

Period = 50.40978 [0.00122] d
Epoch = 173.9130 [0.0231] BKJD
 $R_p/R^* = 0.0312$ [0.0208]
 $a/R^* = 73.58$ [275.96]
 $b = 0.85$ [1.28]
 $\text{Seff} = 72.39$ [38.83]
 $T_{\text{eq}} = 744$ [100] K
 $R_p = 5.88$ [4.37] R_{e}
 $a = 0.2818$ [0.0899] AU
 $\text{Ag} = 987.25$ [1428.81] [0.69 σ]
 $T_{\text{eff}} = 6446$ [2199] K [2.59 σ]

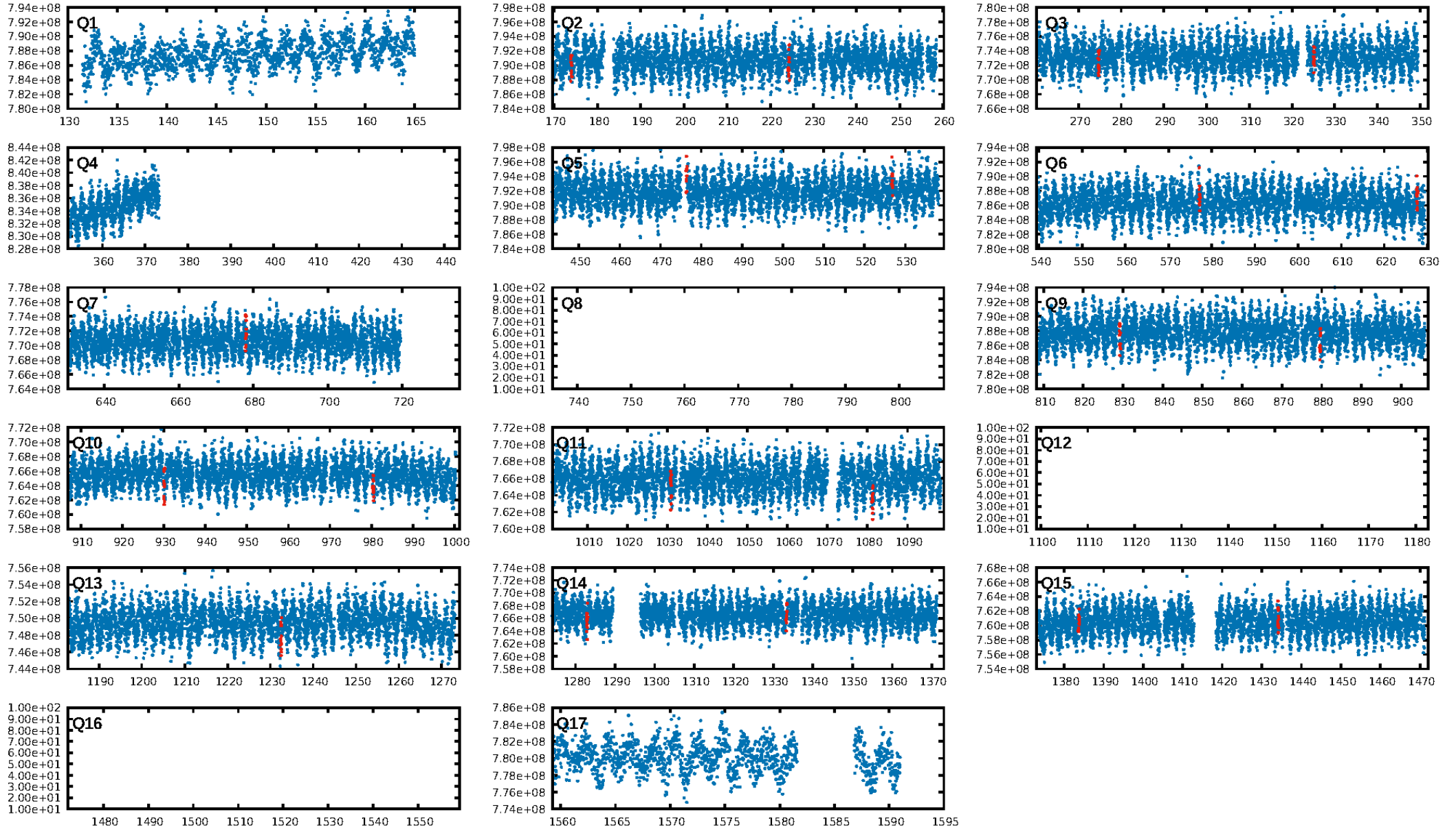
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.28 σ]
LongPeriod-sig: 100.0% [4.57 σ]
ModelChiSquare2-sig: 51.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: 7.582
Centroid-sig: 5.8%
Centroid-so: 0.195 arcsec [1.48 σ]
OotOffset-rm: 0.270 arcsec [0.63 σ]
KicOffset-rm: 0.319 arcsec [0.80 σ]
OotOffset-st: 4/4/0/3 [11]
KicOffset-st: 4/4/0/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.00 [0/11]

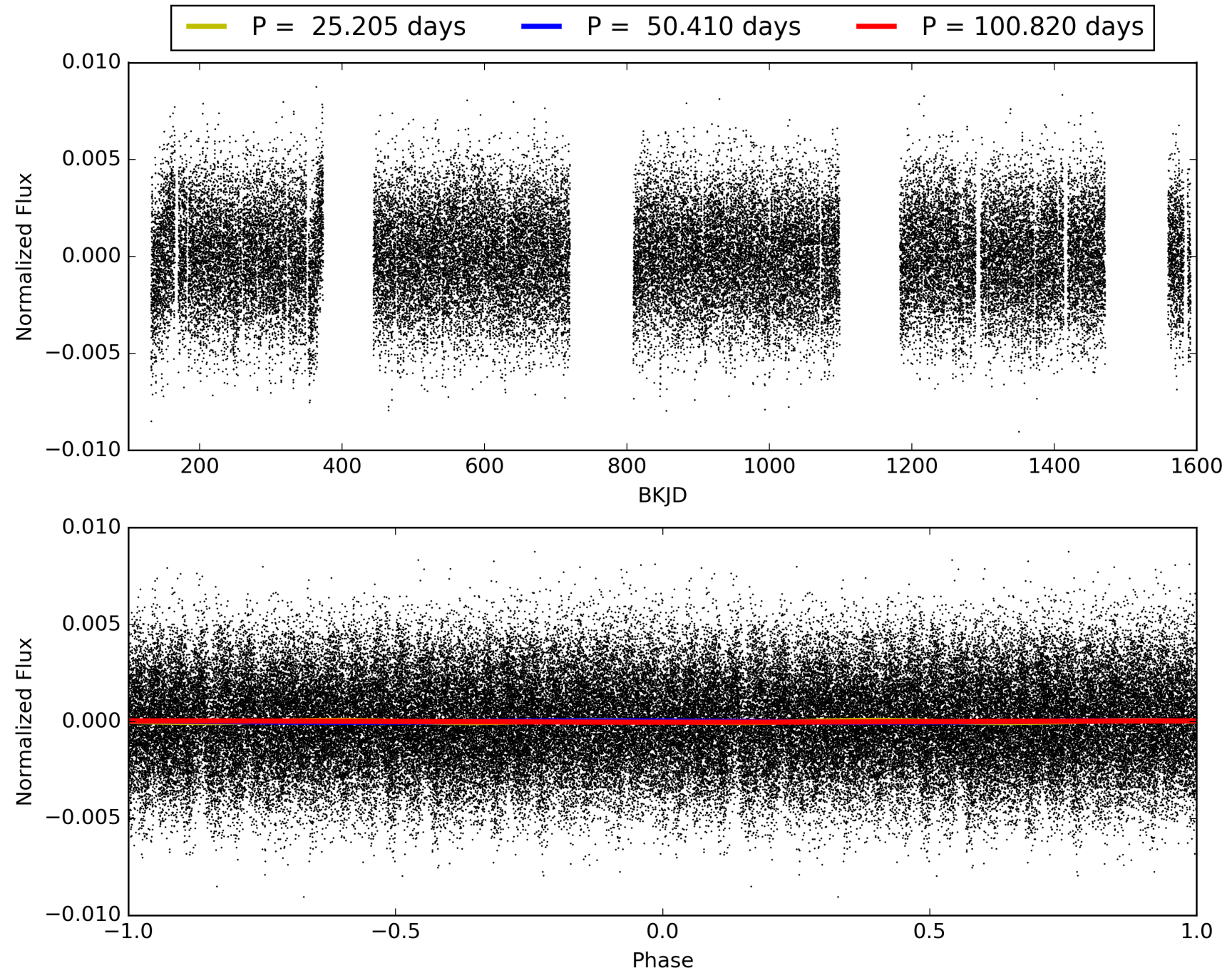
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:18:29 Z

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

TCE 011954651-06, PDC Light Curves

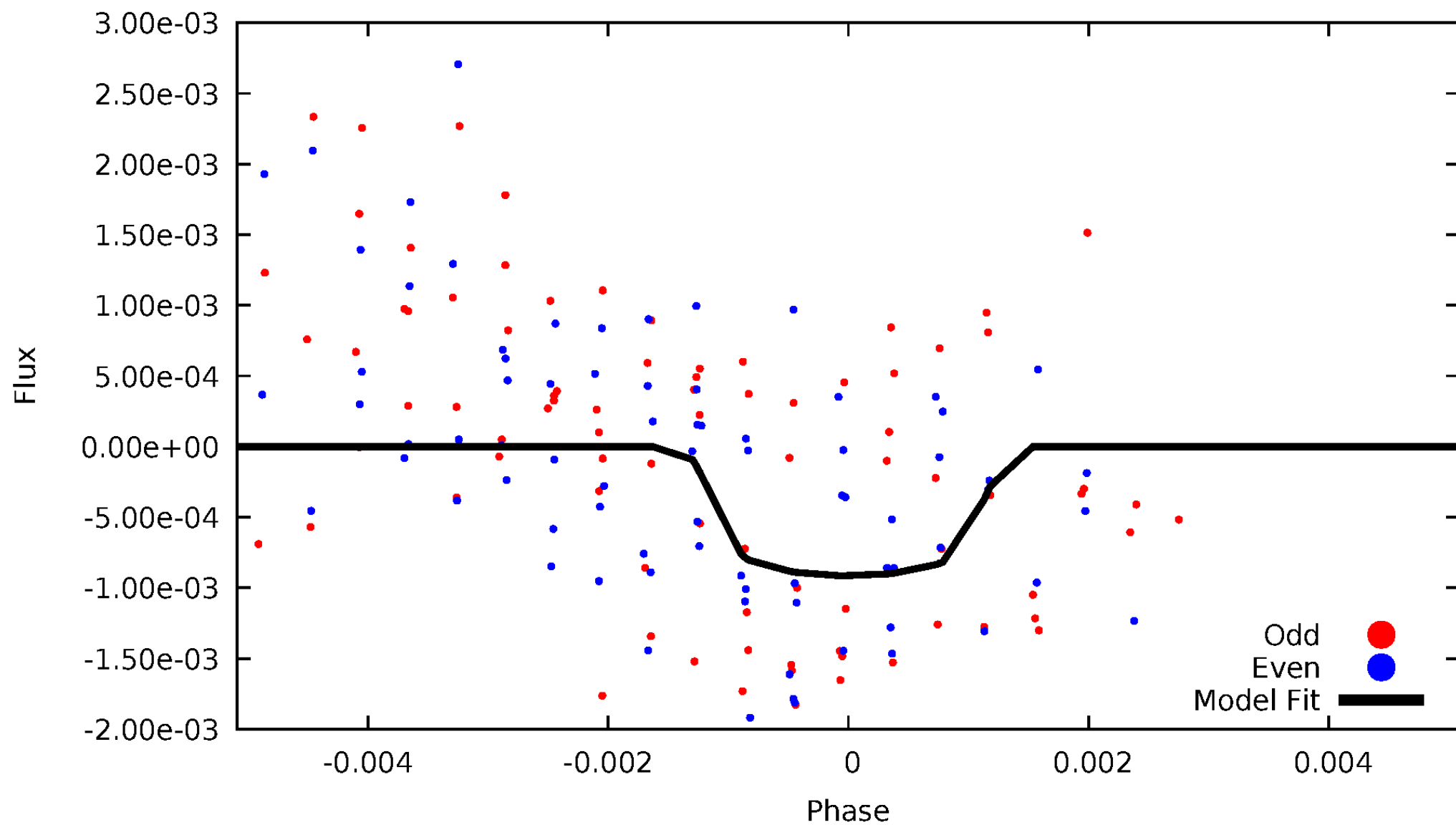


TCE 011954651-06



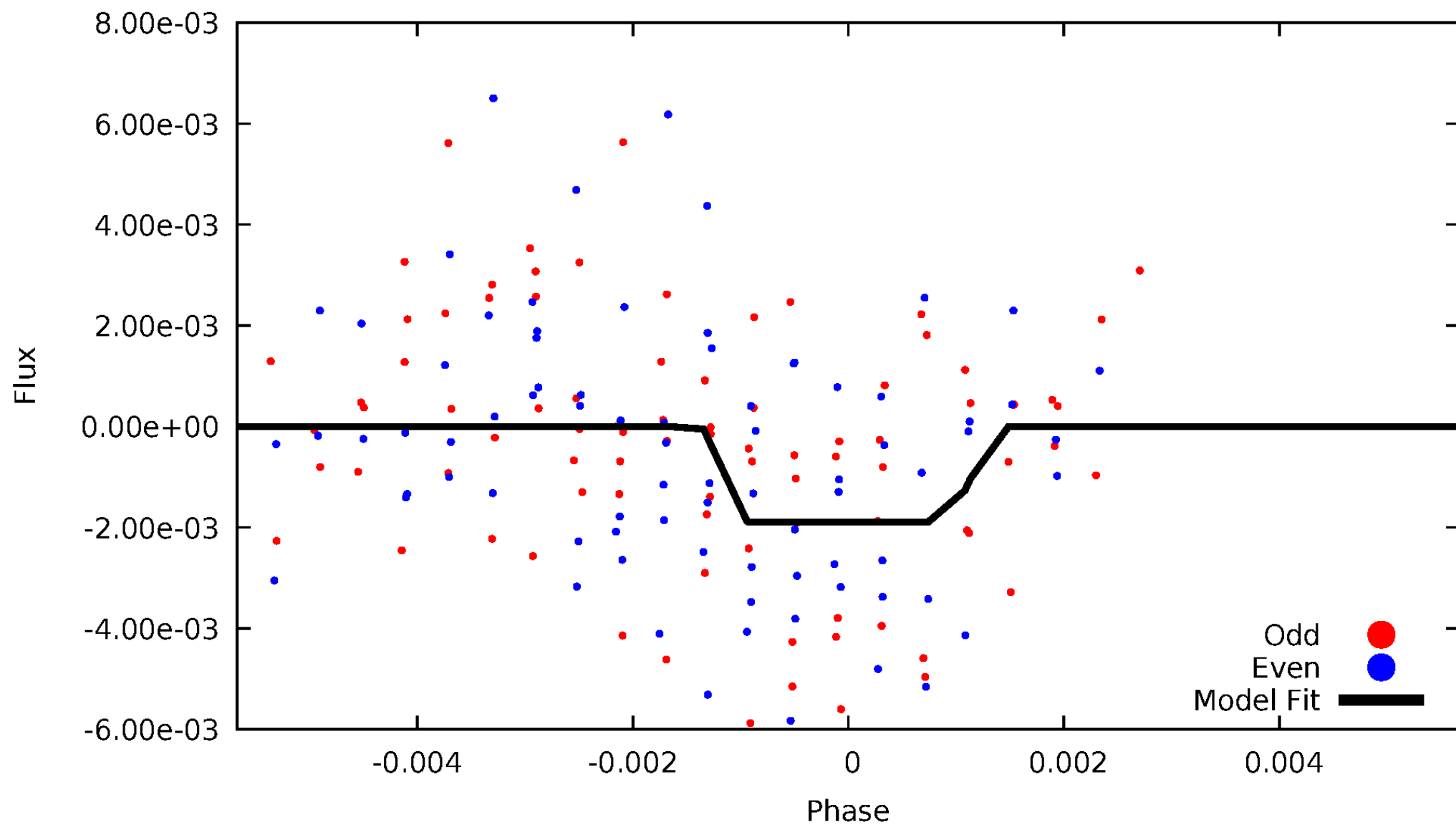
DV Odd/Even

TCE 011954651-06



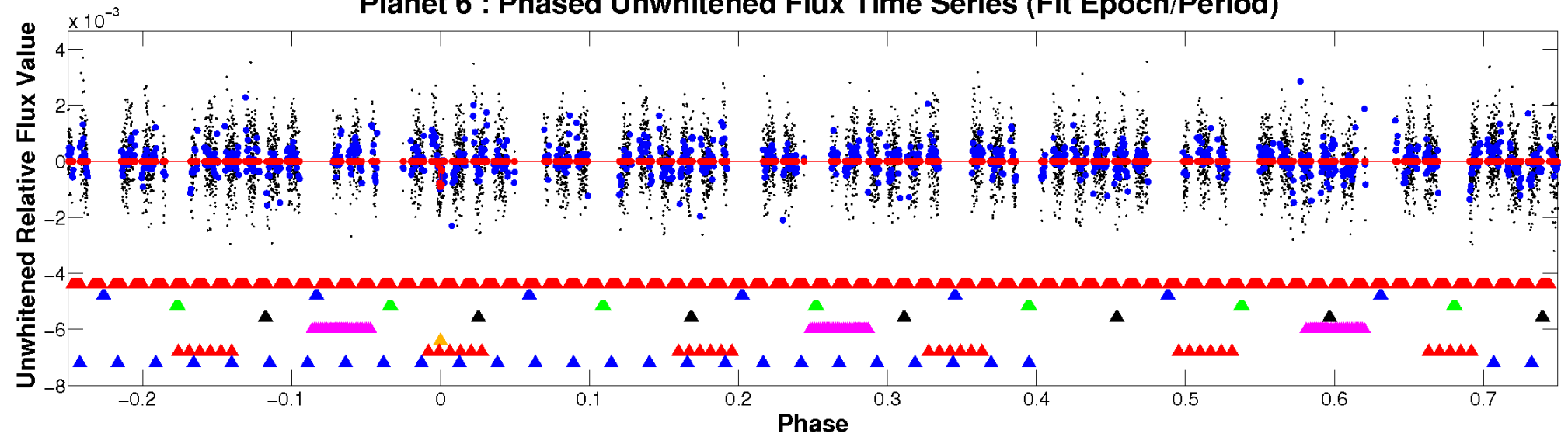
ALT Odd/Even

TCE 011954651-06

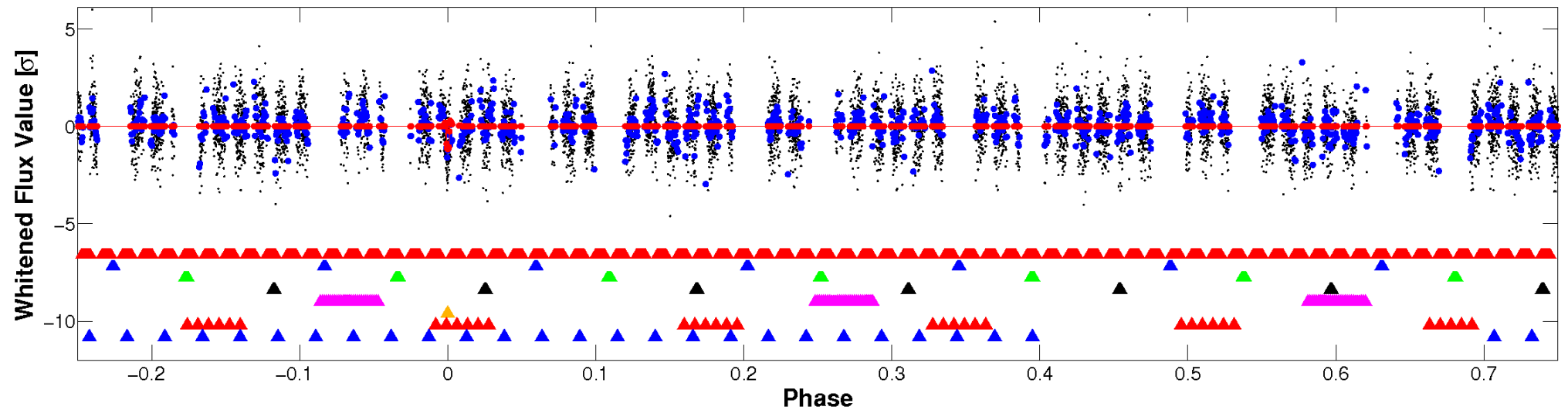


Non-Whitened Vs. Whitened Light Curve

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

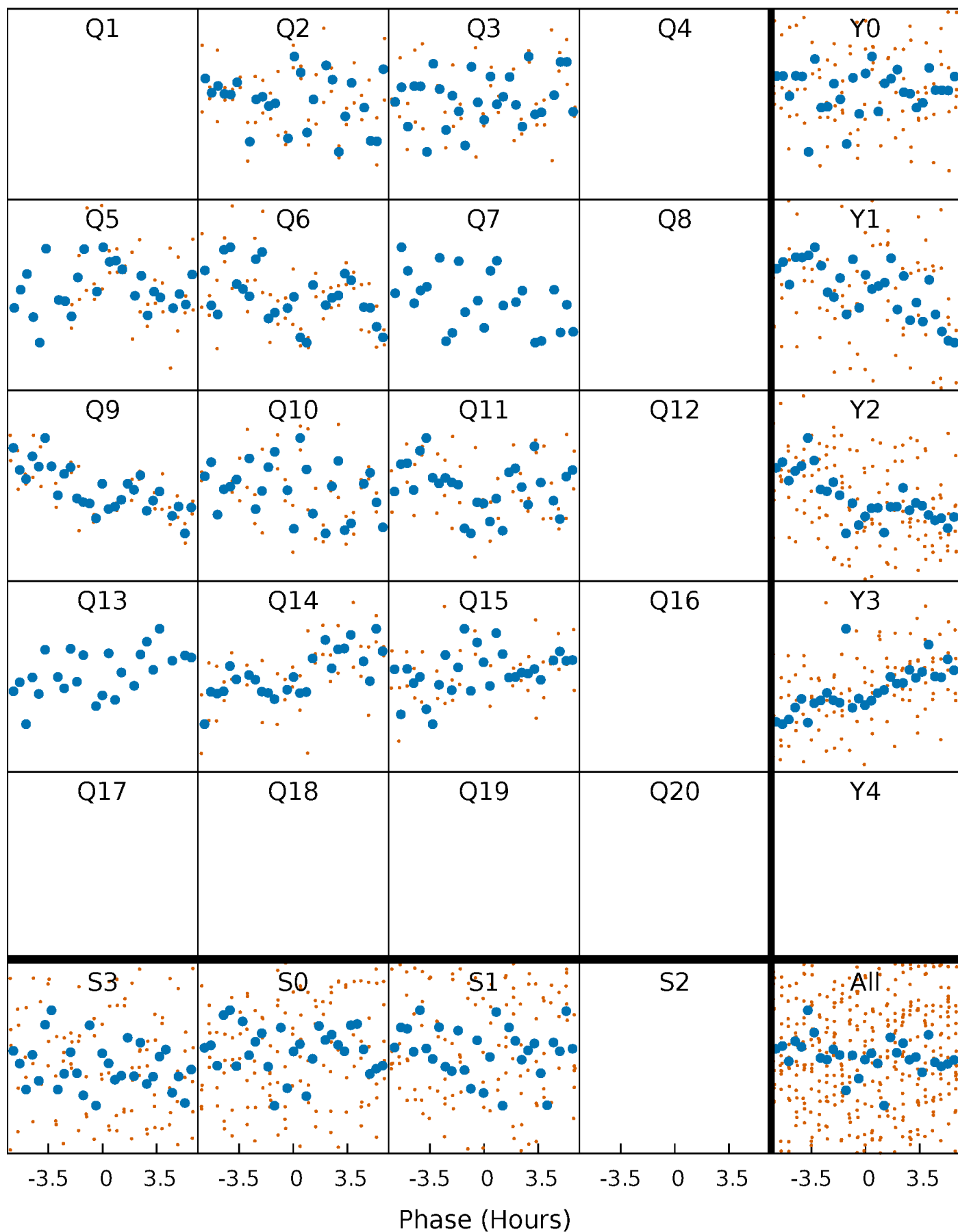


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



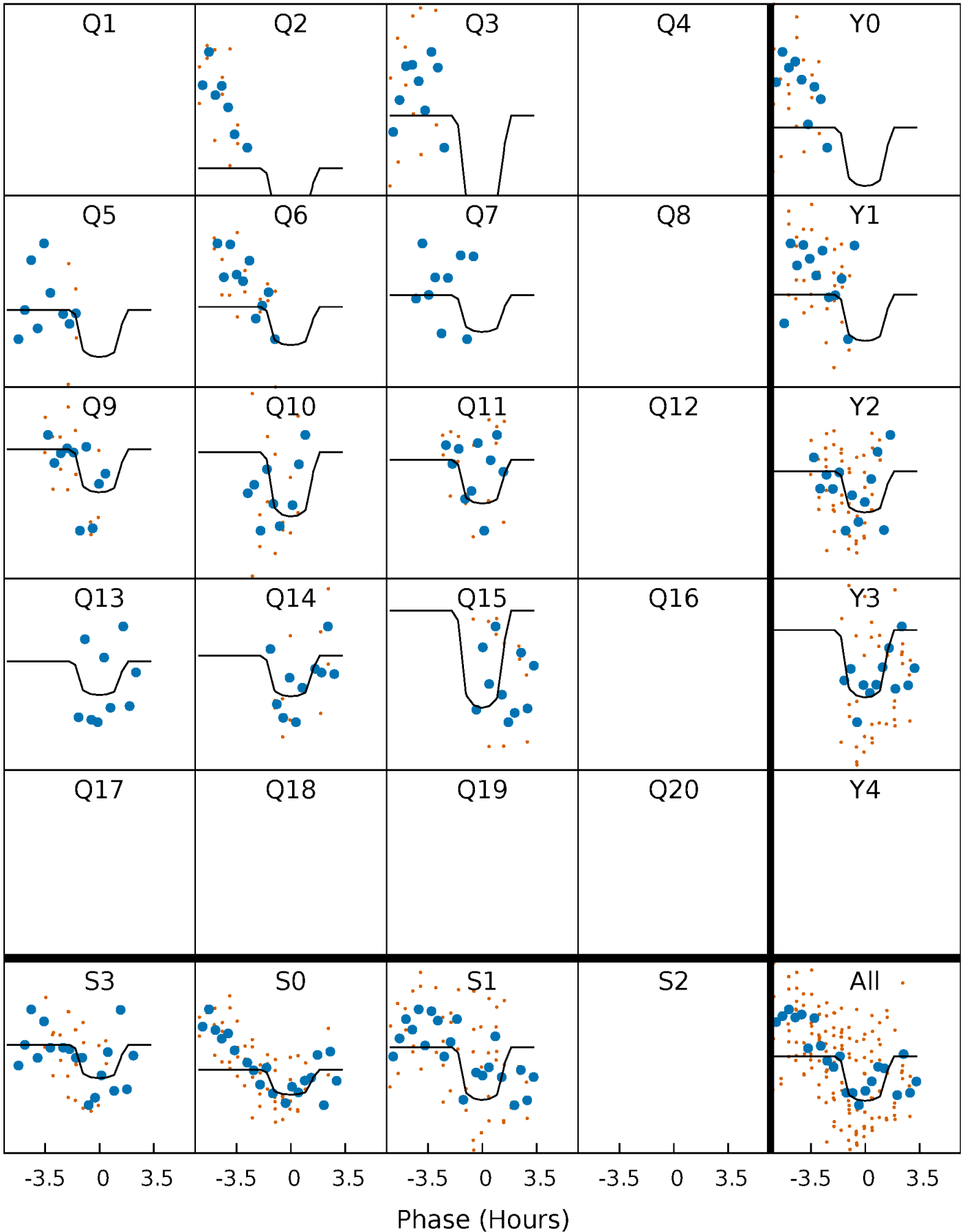
PDC Quarter-Phased Transit Curves

TCE 011954651-06 P= 50.409778 Days $T_0=173.913015$ (BKJD)



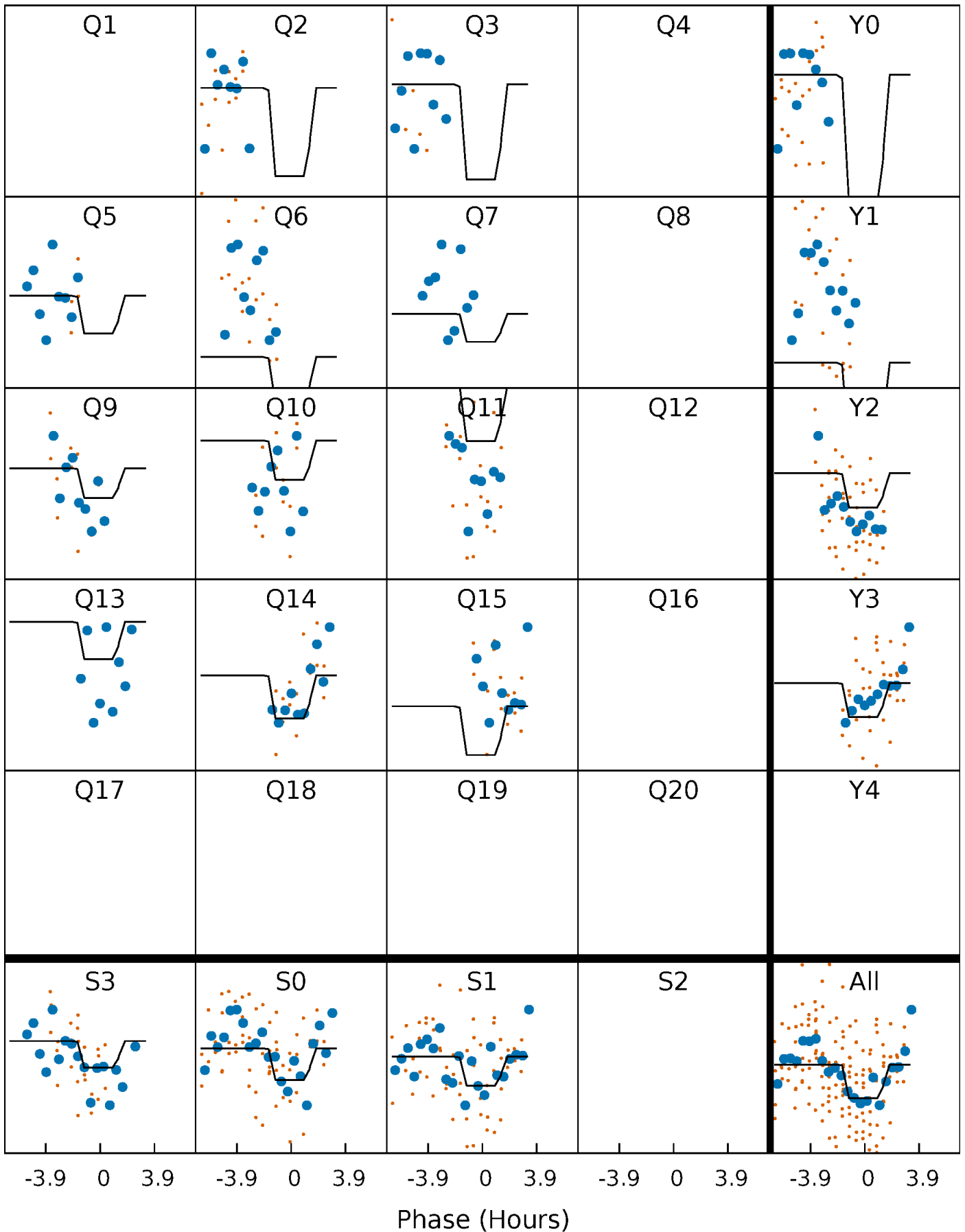
DV Quarter-Phased Transit Curves

TCE 011954651-06 P= 50.409778 Days $T_0=173.913015$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

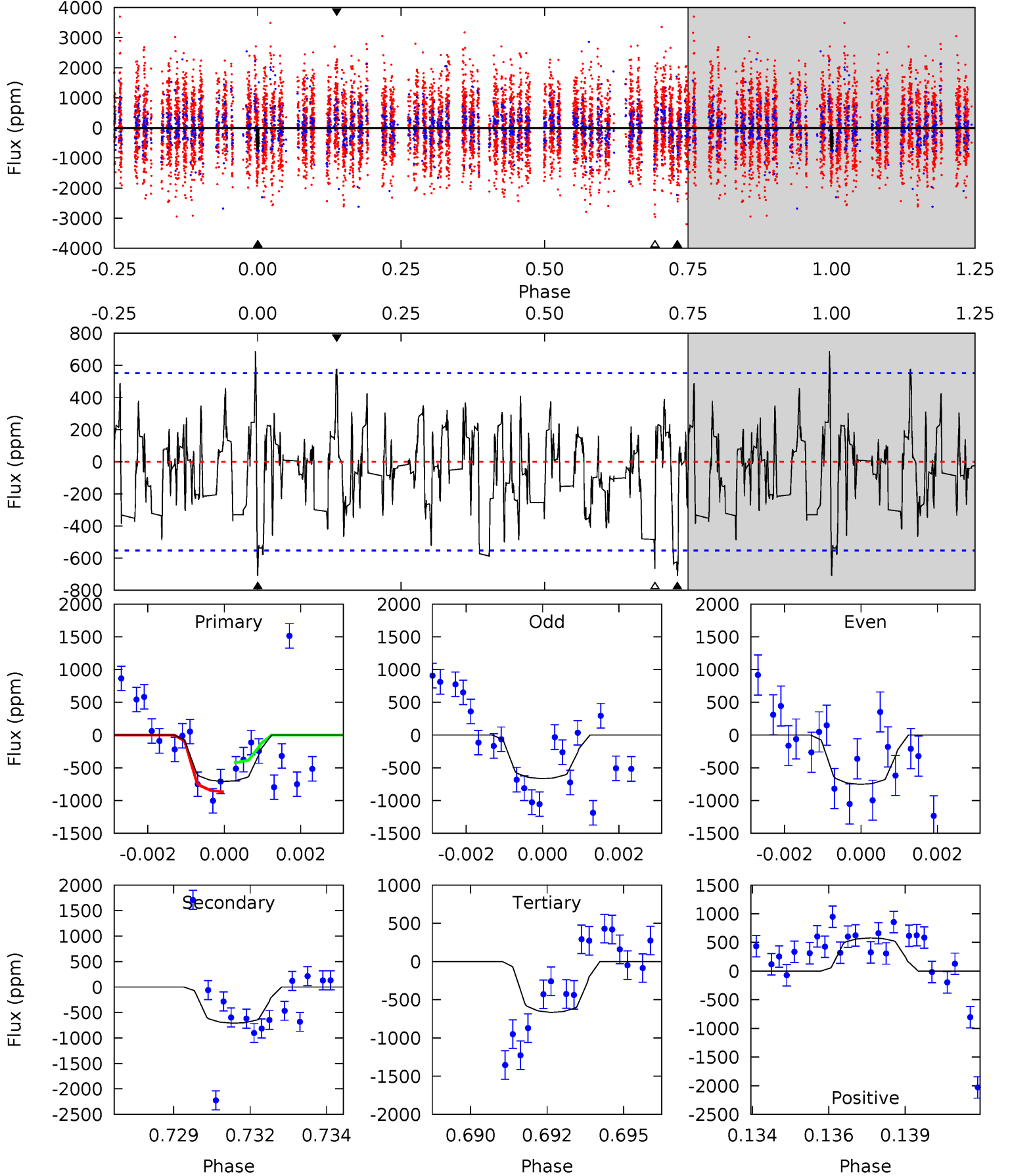
TCE 011954651-06 P= 50.409799 Days $T_0=173.914972$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-06, P = 50.409778 Days, E = 123.503237 Days

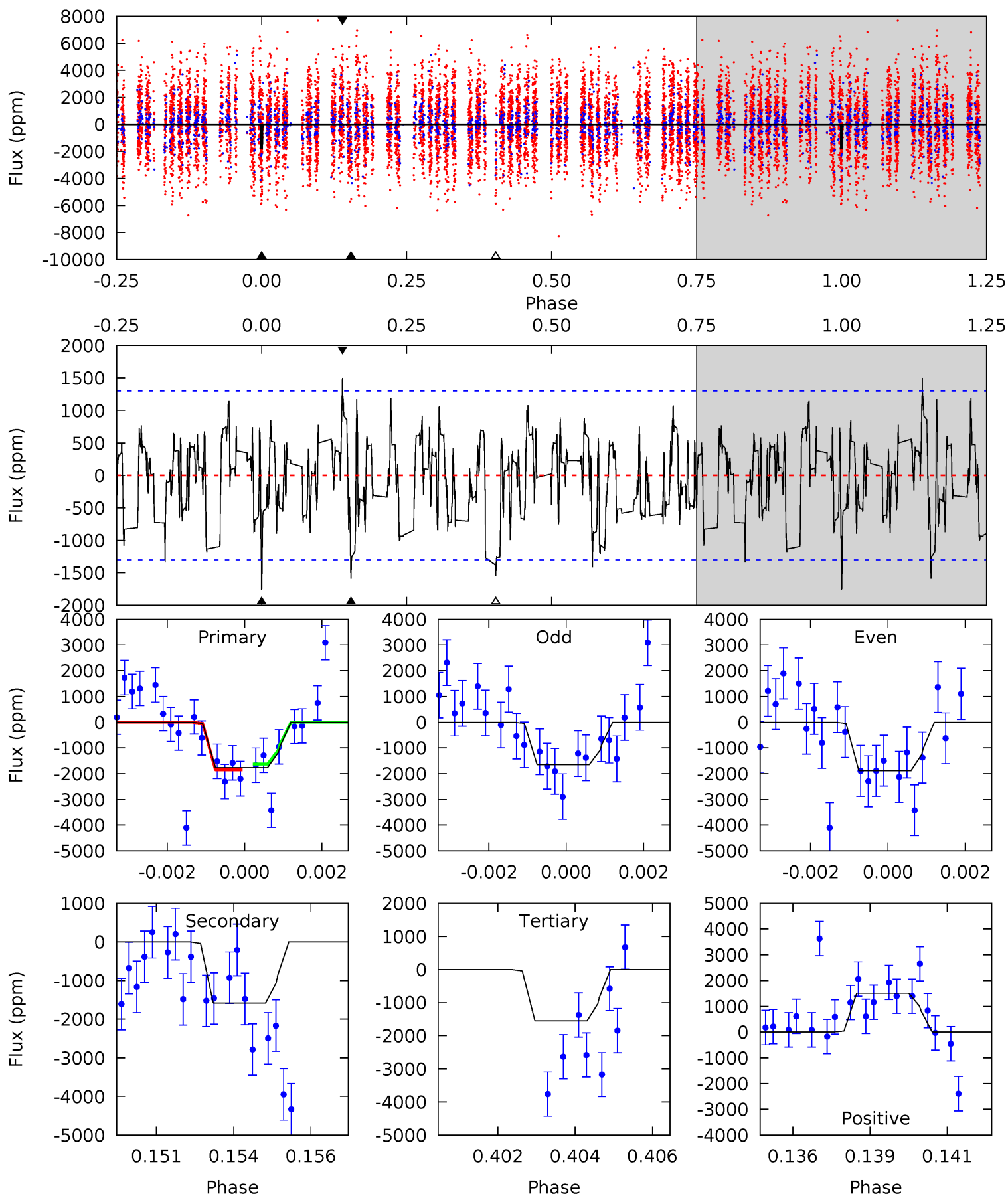
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.78	6.78	6.36	5.52	5.29	3.03	2.02	0.42	1.25	0.43	1.26	0.42	0.98	0.49	2.03



Alt Model-Shift Uniqueness Test

011954651-06, P = 50.409799 Days, E = 123.505173 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.16	6.44	6.28	6.09	5.29	3.03	1.93	0.89	1.08	0.17	0.36	0.48	0.63	0.46	0.43



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-709 \pm 105	$5.84^{+3.92}_{-3.05}$	1020^{+88}_{-83}	6152^{+3401}_{-1245}	923^{+2990}_{-594}
Alt.	-1588 \pm 247	$7.74^{+3.98}_{-3.52}$	1024^{+89}_{-91}	6488^{+2814}_{-1115}	1147^{+2789}_{-658}

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

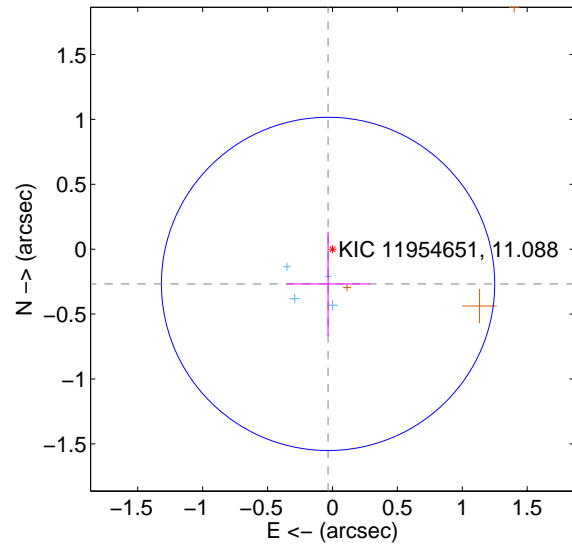
Supplemental centroid analysis for 011954651-06. **Kepler magnitude: 11.09.** Transit SNR 7.77

There are 6 quarters with good PRF difference image offsets

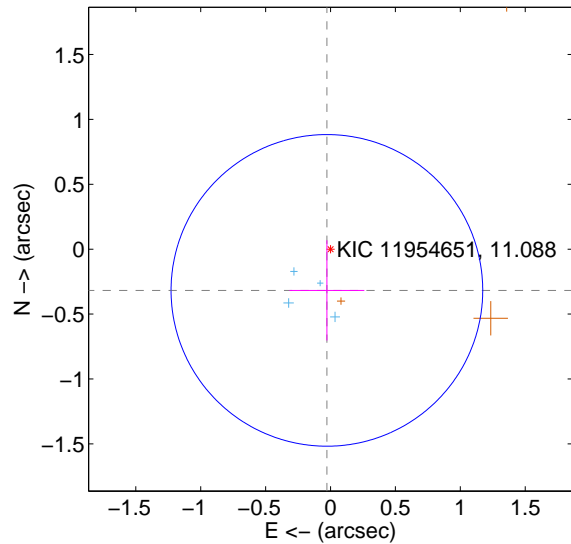
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.270 ± 0.428	0.63	0.034 ± 0.321	-0.268 ± 0.403
PRF-fit source offset from KIC position	0.319 ± 0.400	0.80	0.028 ± 0.289	-0.318 ± 0.386
photometric centroid source offset	0.19 ± 0.13	1.48	-0.02 ± 0.11	-0.19 ± 0.13

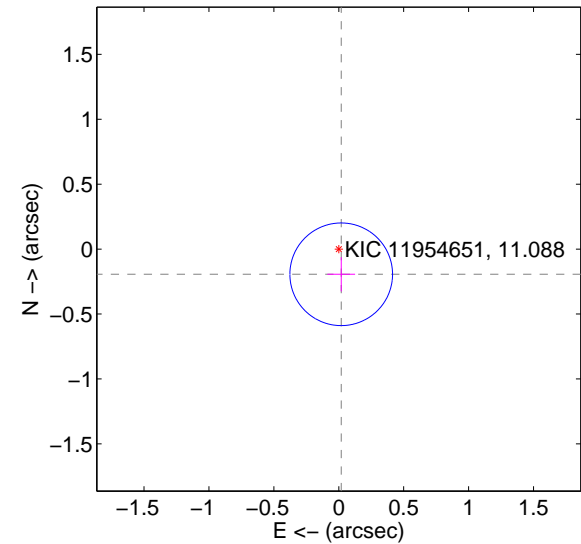
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

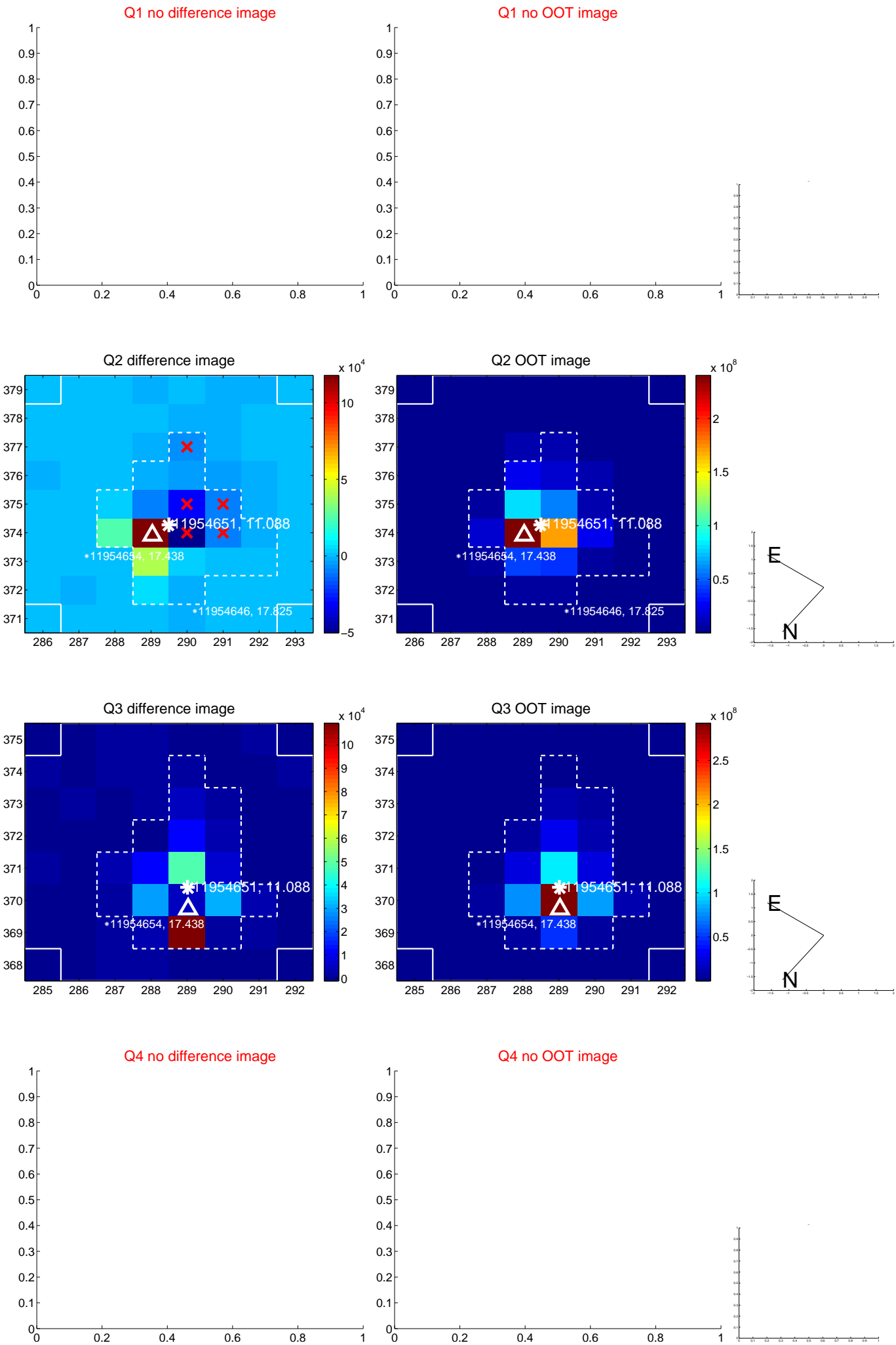


offset from photometric centroids

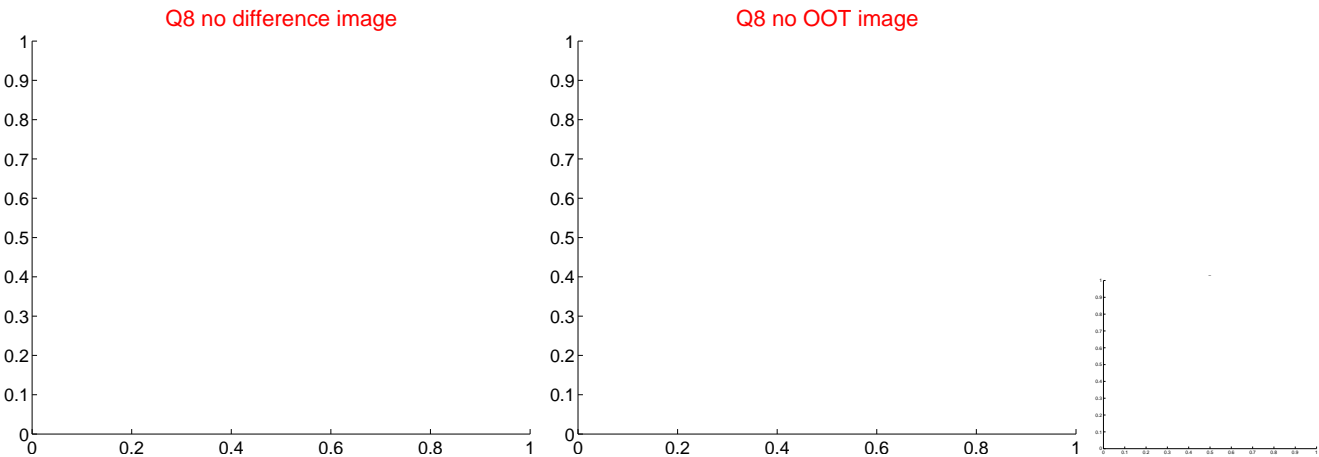
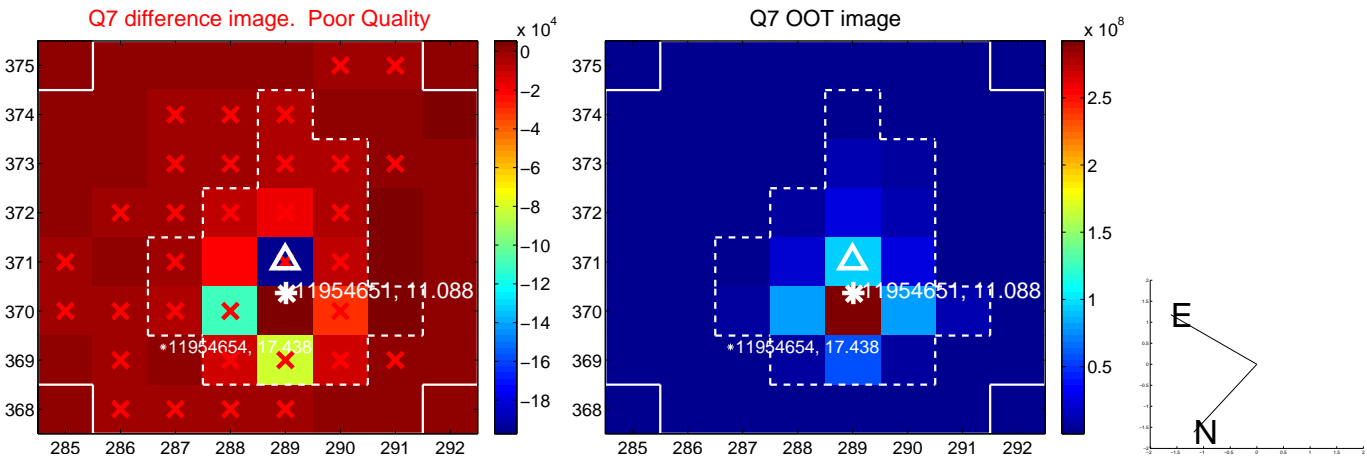
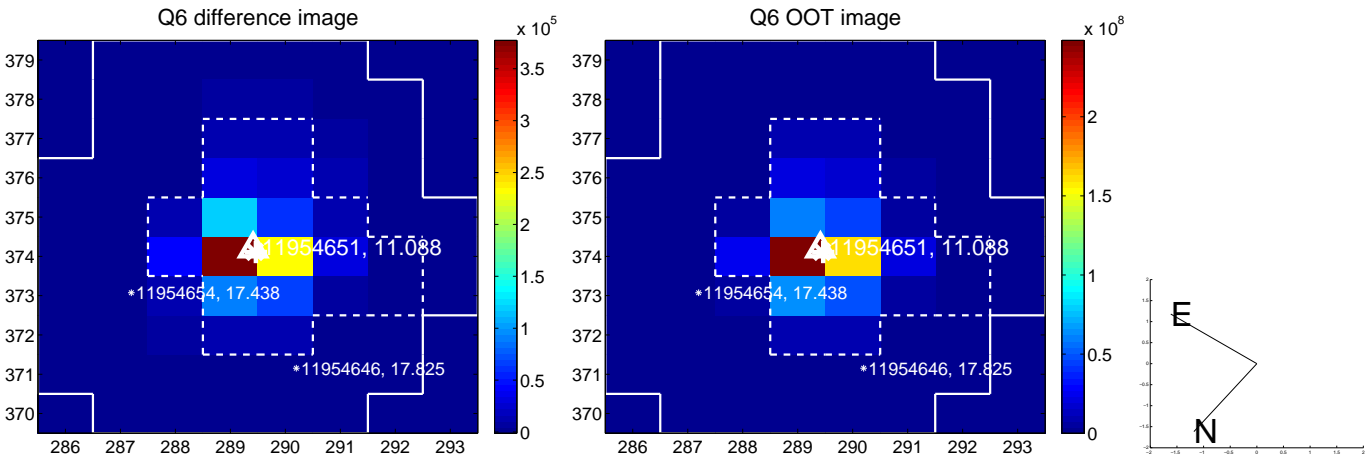
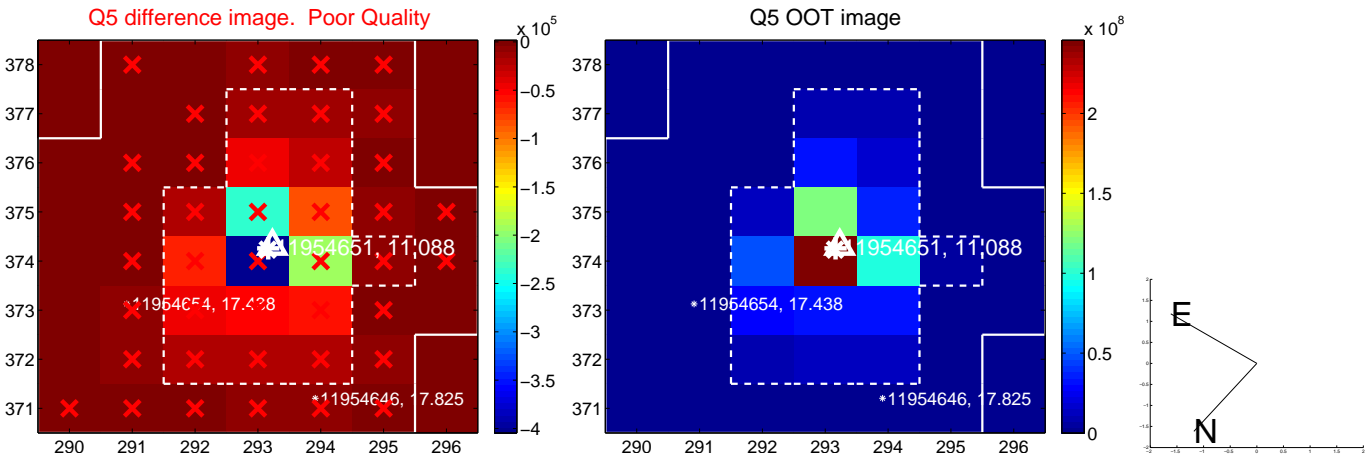


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

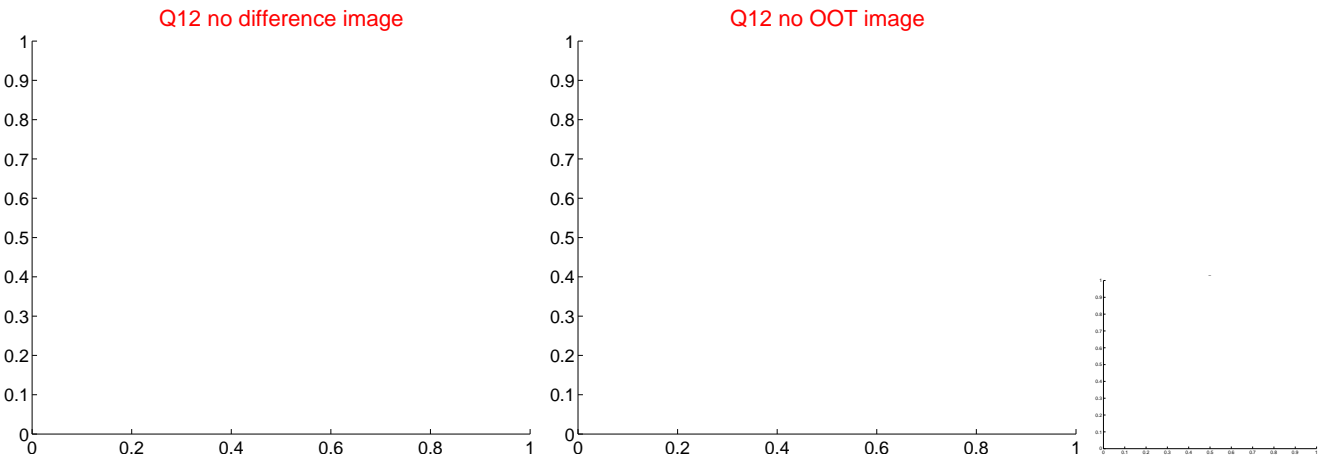
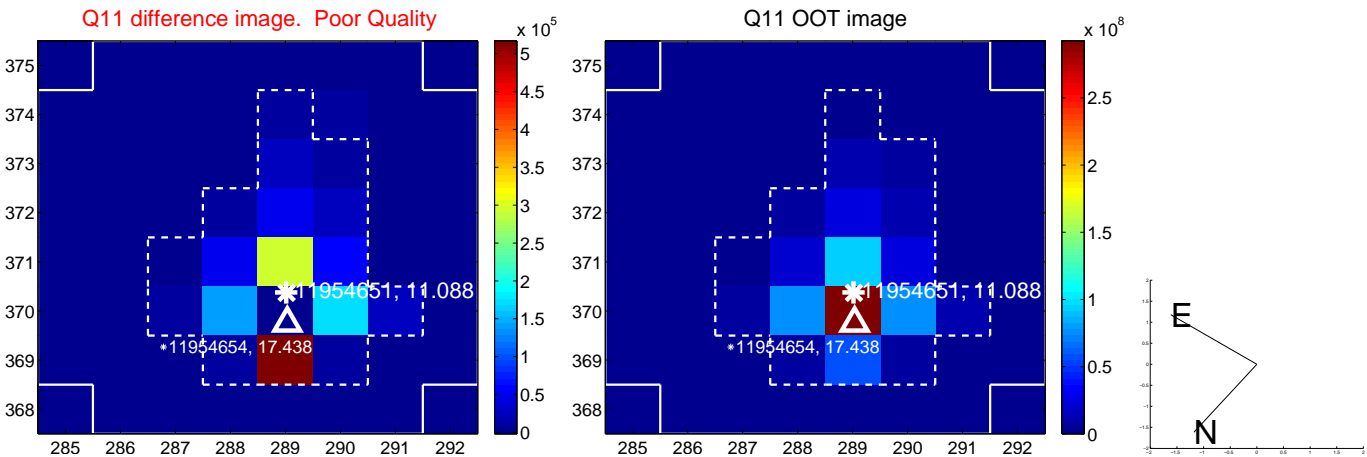
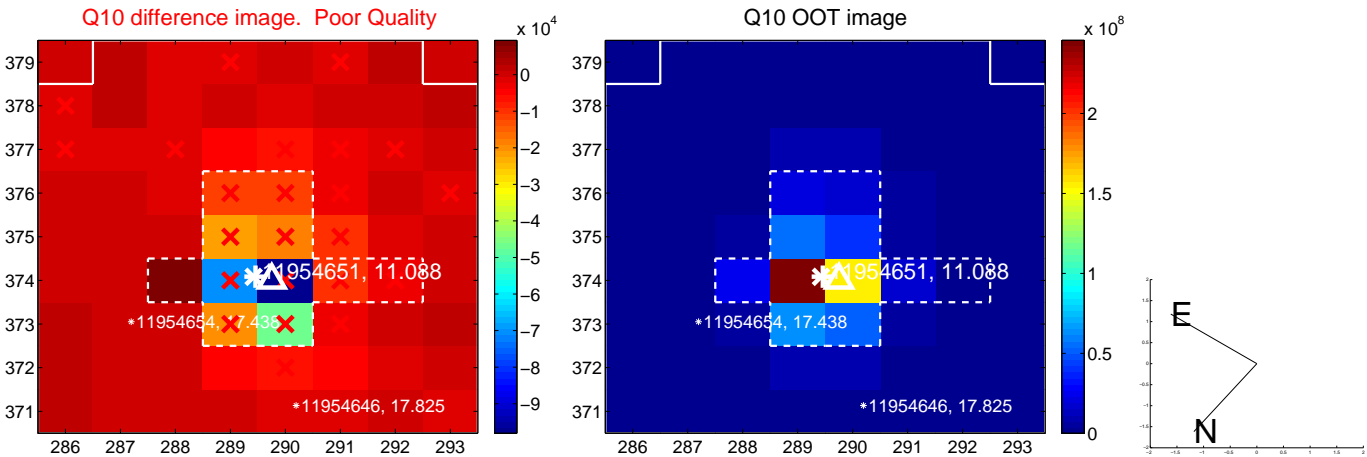
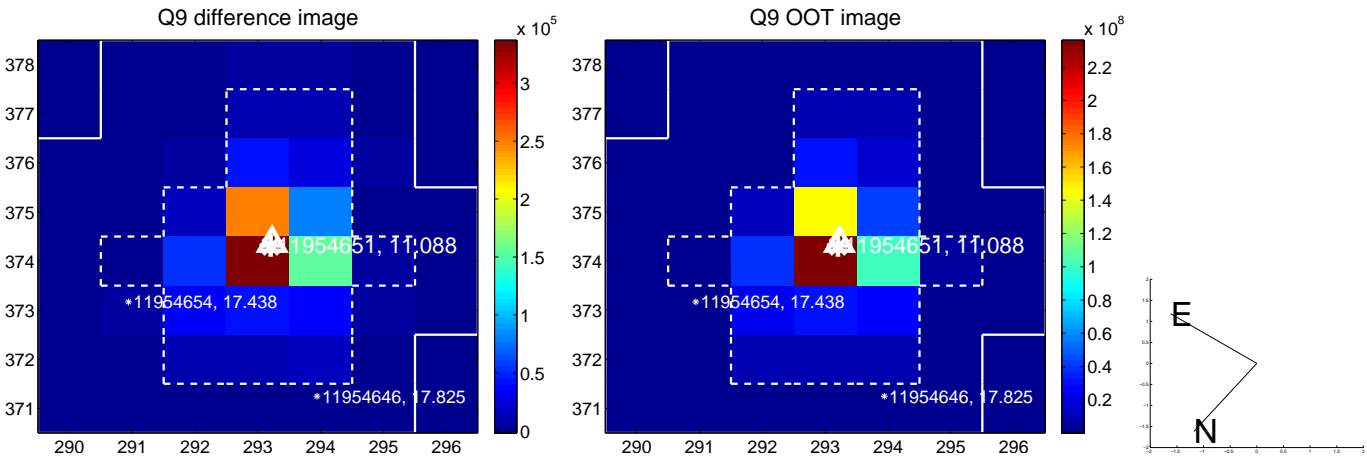
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



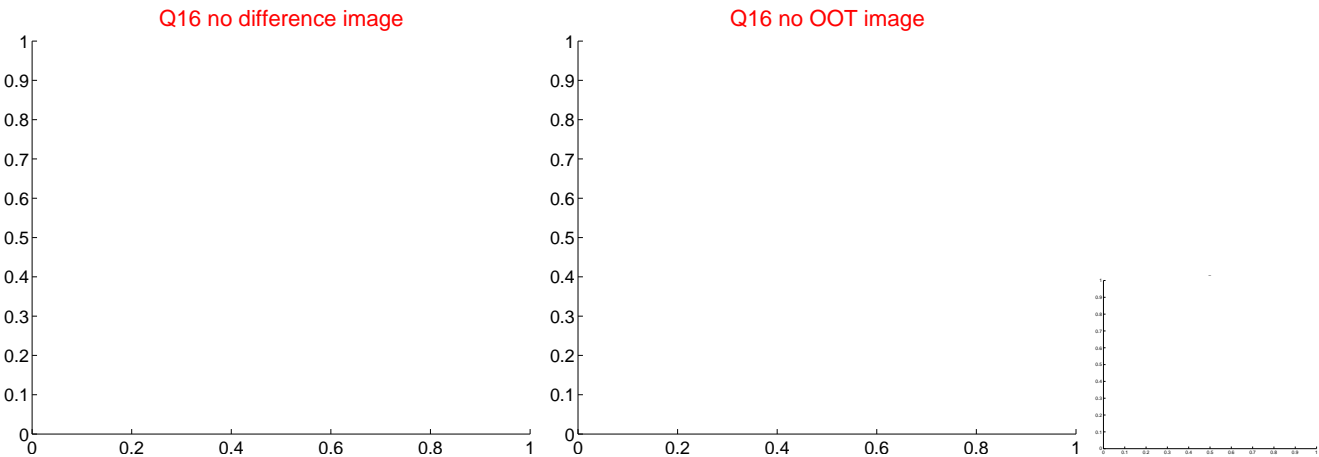
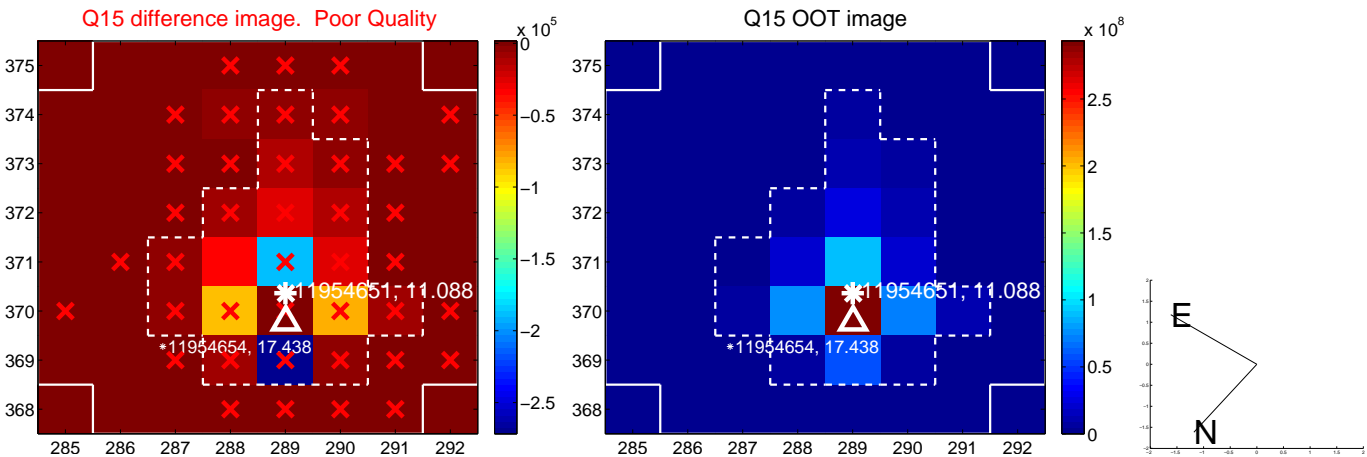
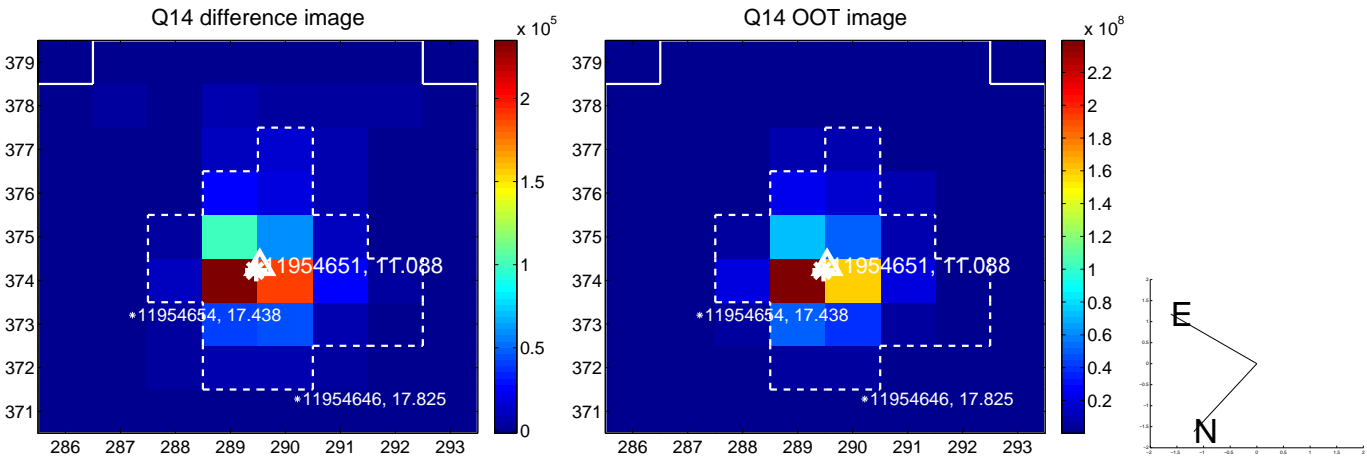
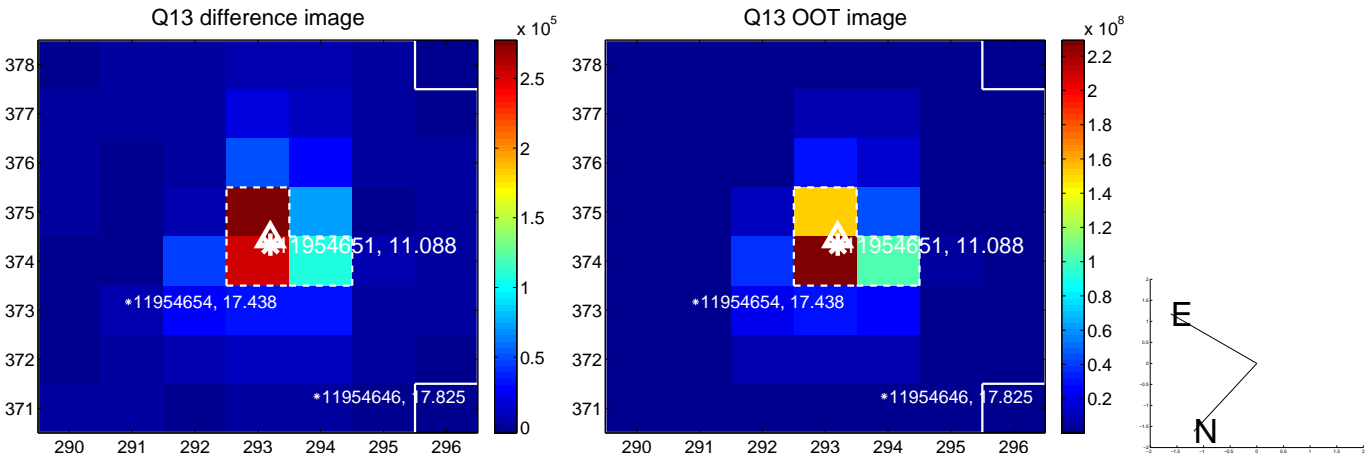
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



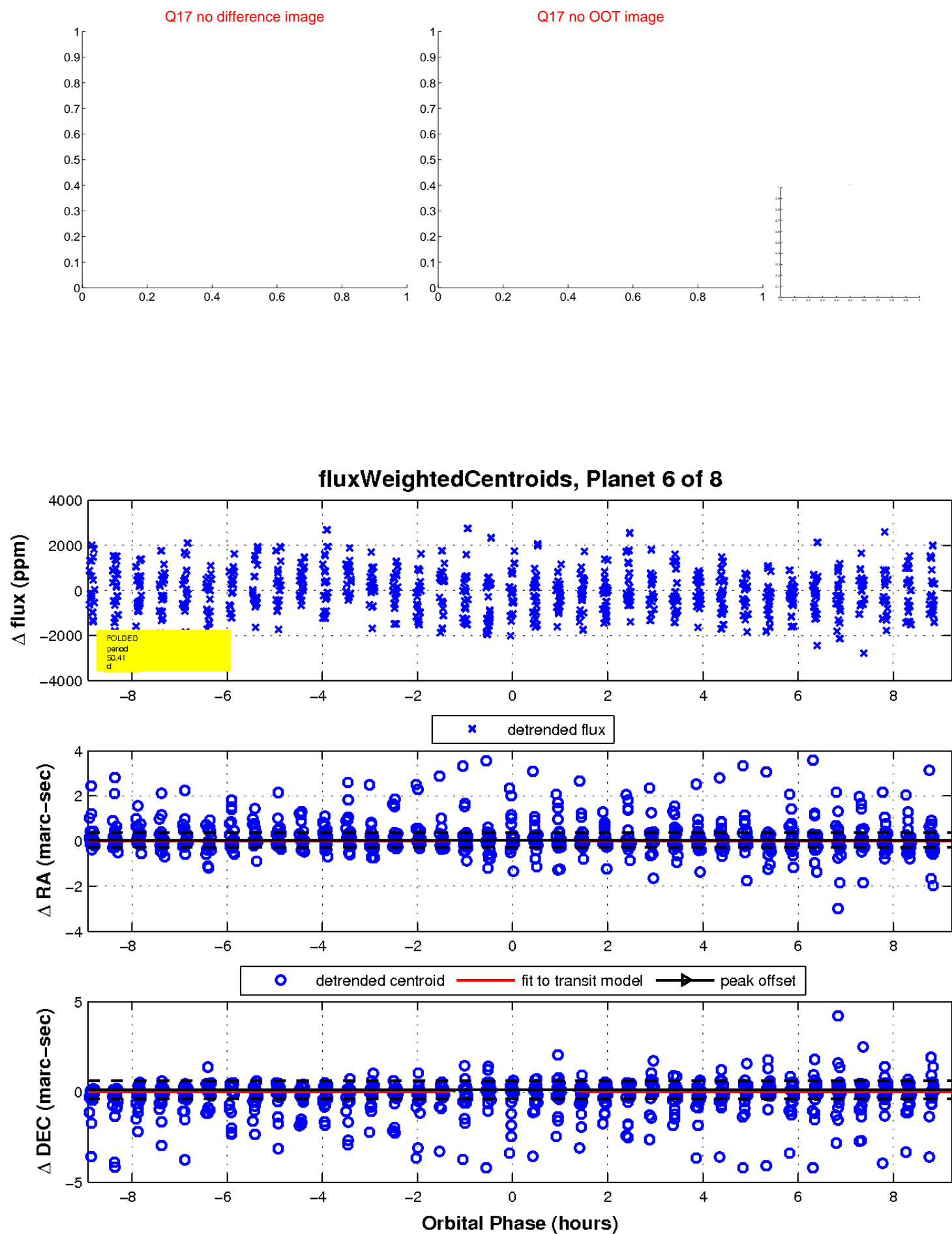
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

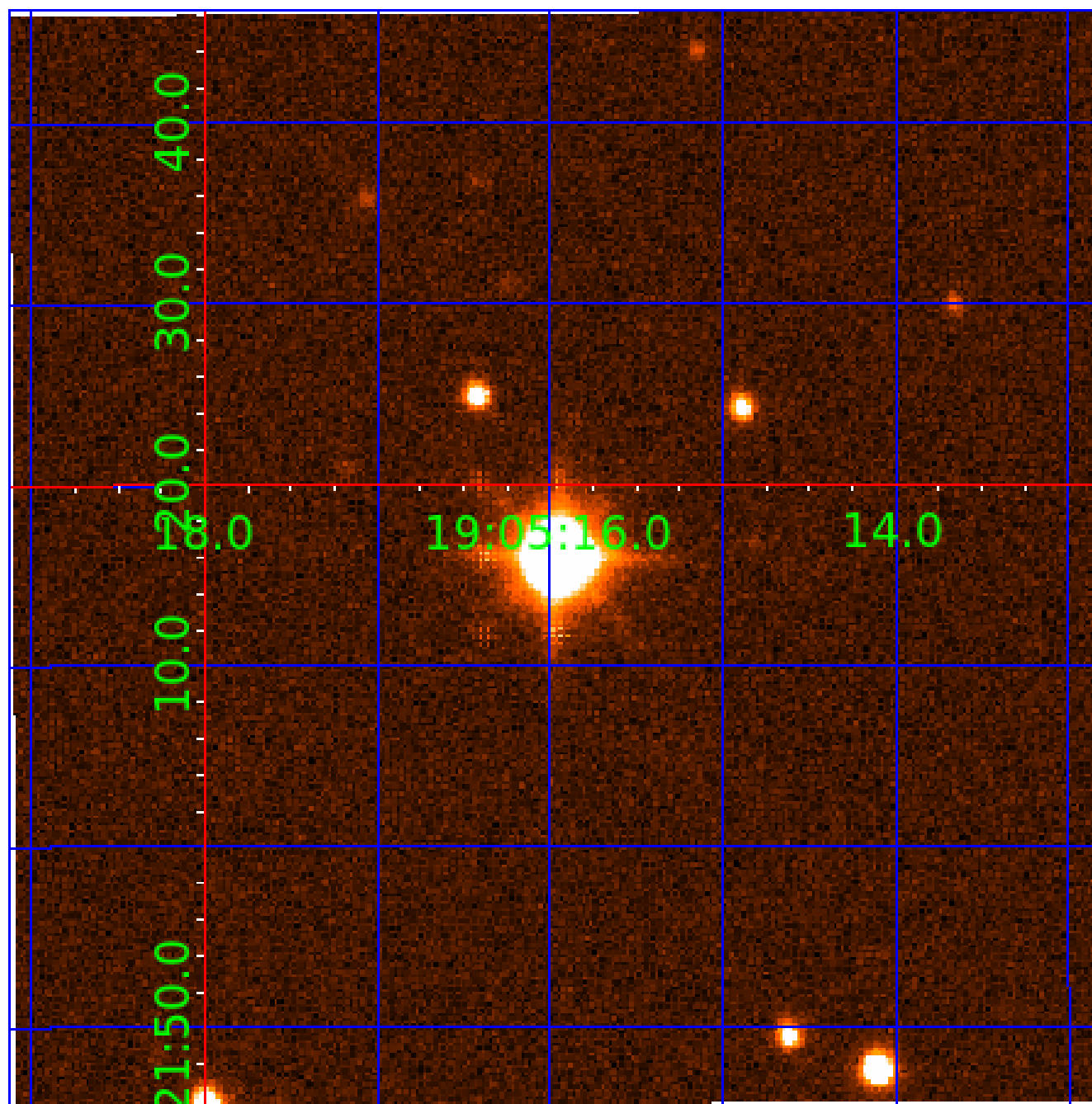


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011954651

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})
011954651-01	OBS	No	0.700292	132.024552	141.9	3.982	10.3	11.8	1.73	6810	2.39	21675.65
011954651-02	OBS	No	7.200909	133.761875	989.6	8.358	12.9	15.0	1.73	6810	10.09	969.38
011954651-03	OBS	No	7.200587	136.289486	835.7	7.495	11.9	12.9	1.73	6810	6.35	969.44
011954651-04	OBS	No	28.803844	132.031813	1159.9	3.834	8.6	8.2	1.73	6810	9.99	152.67
011954651-05	OBS	No	16.779839	137.982768	703.6	5.791	7.9	8.2	1.73	6810	4.92	313.78
011954651-06	OBS	No	50.409778	173.913015	913.5	3.079	7.7	7.8	1.73	6810	5.88	72.39
011954651-07	OBS	No	41.948088	150.285561	1818.2	2.615	8.2	8.1	1.73	6810	8.28	92.48
011954651-08	OBS	No	51.694463	159.140573	59.9	6.000	7.8	-1.0	1.73	6810	1.35	70.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

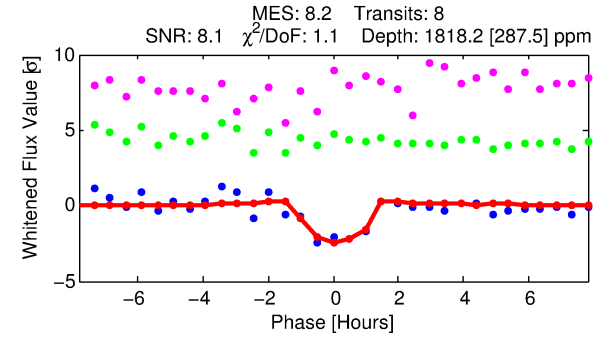
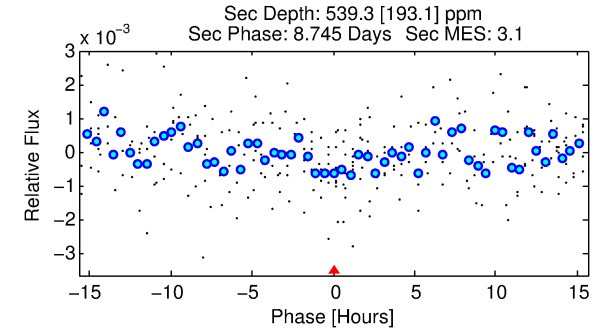
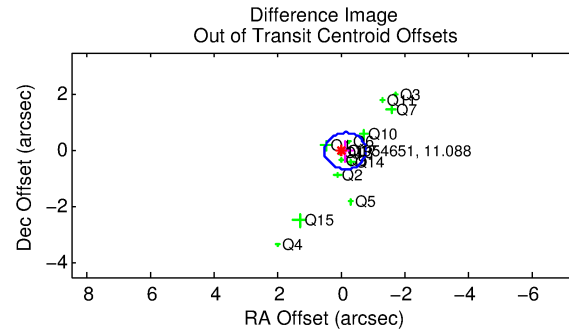
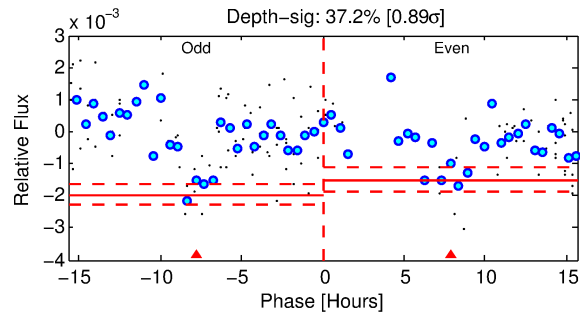
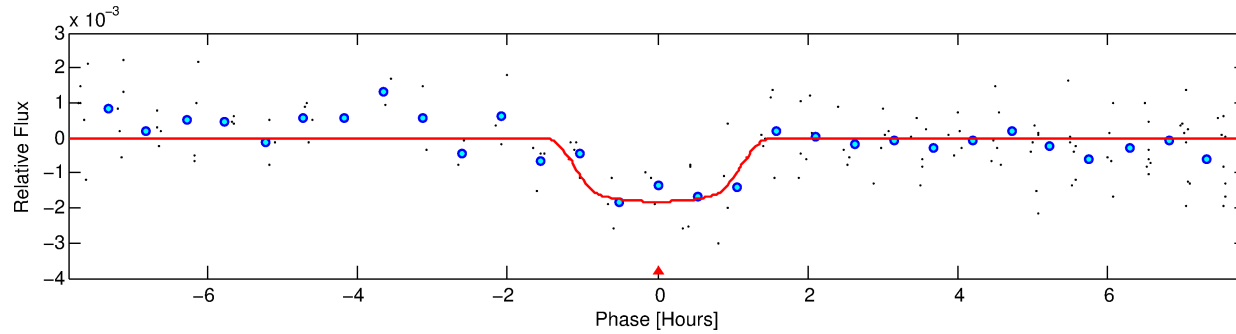
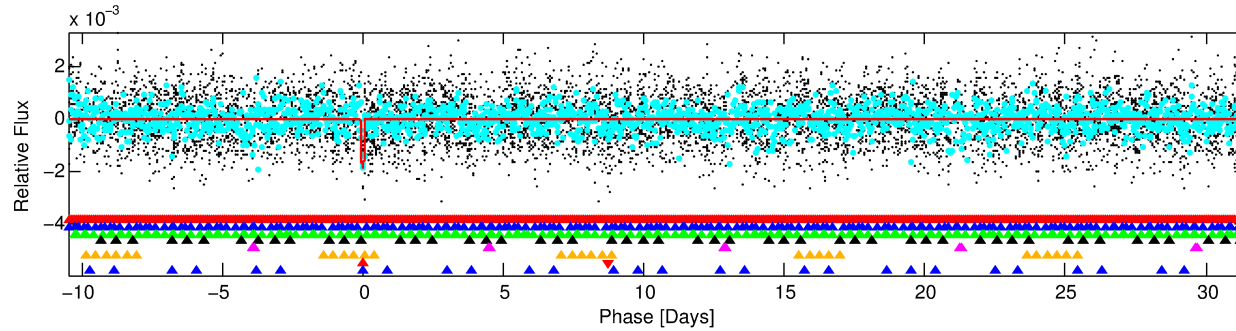
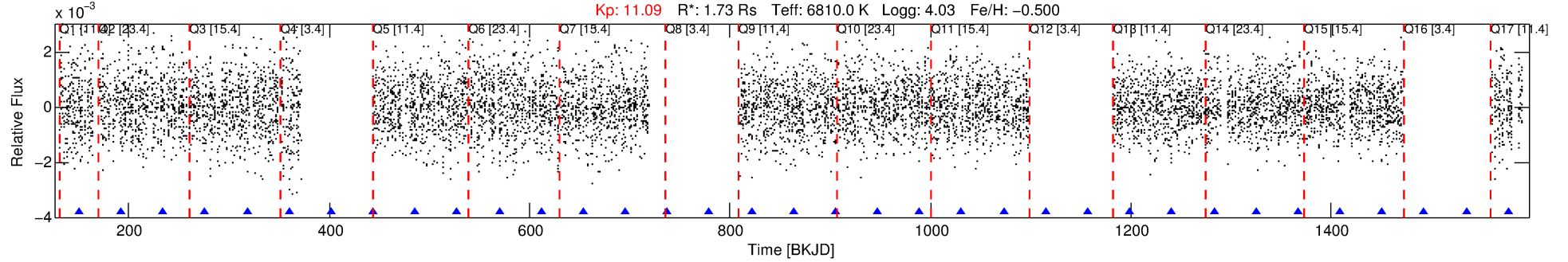
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-07

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 7 of 8 Period: 41.948 d



DV Fit Results:

Period = 41.94809 [0.00056] d
Epoch = 150.2856 [0.0111] BKJD
Rp/R* = 0.0439 [0.0158]
a/R* = 75.85 [144.44]
b = 0.84 [0.67]
Seff = 92.48 [49.61]
Teq = 791 [106] K
Rp = 8.28 [4.05] Re
a = 0.2493 [0.0795] AU
Ag = 268.78 [255.69] [1.05 σ]
Teff = 4950 [1015] K [4.07 σ]

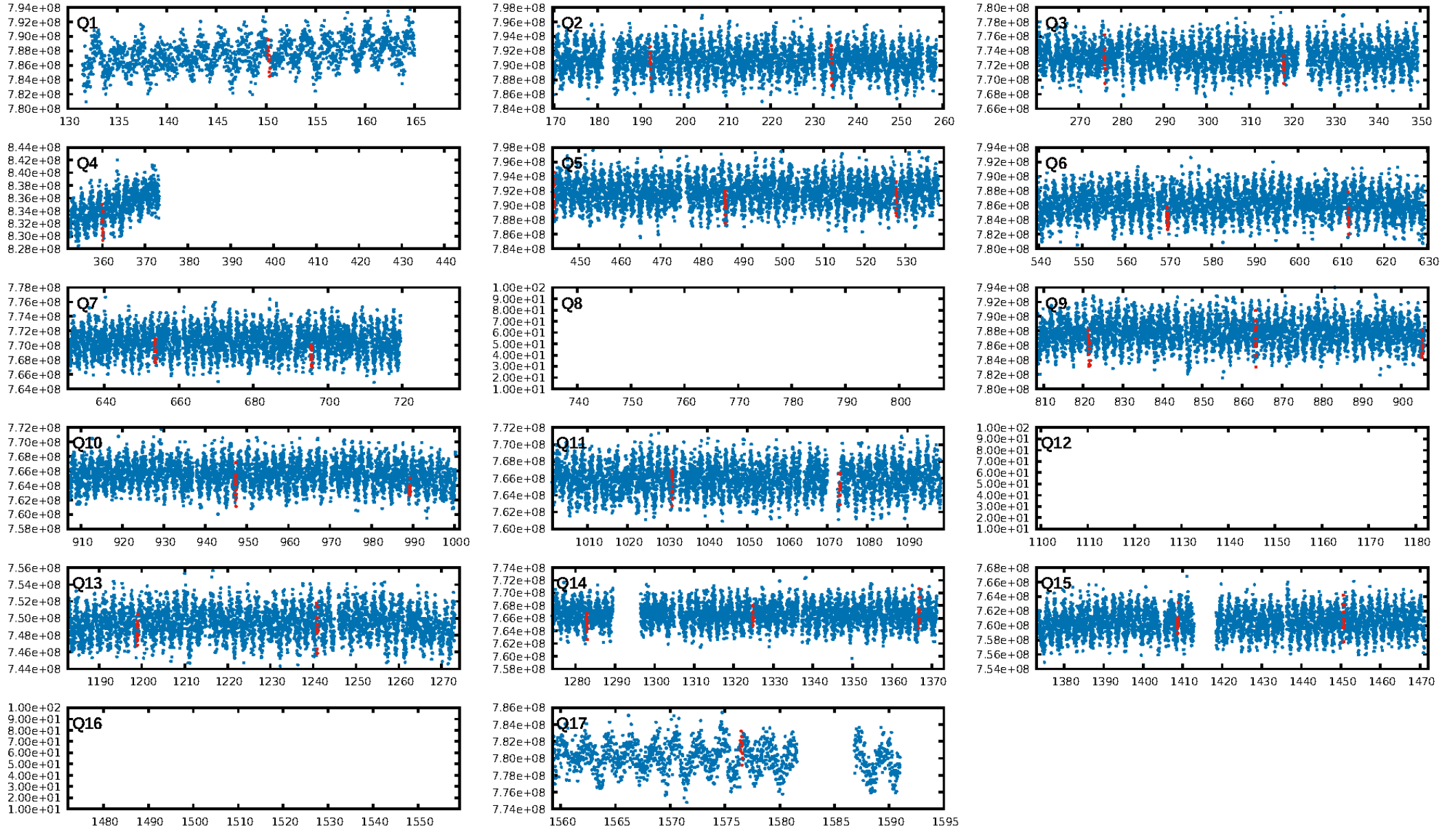
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [67.98 σ]
LongPeriod-sig: 100.0% [50.28 σ]
ModelChiSquare2-sig: 31.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.9256
Centroid-sig: 0.8%
Centroid-so: 0.133 arcsec [2.27 σ]
OotOffset-rm: 0.124 arcsec [0.57 σ]
KicOffset-rm: 0.140 arcsec [0.83 σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/14]

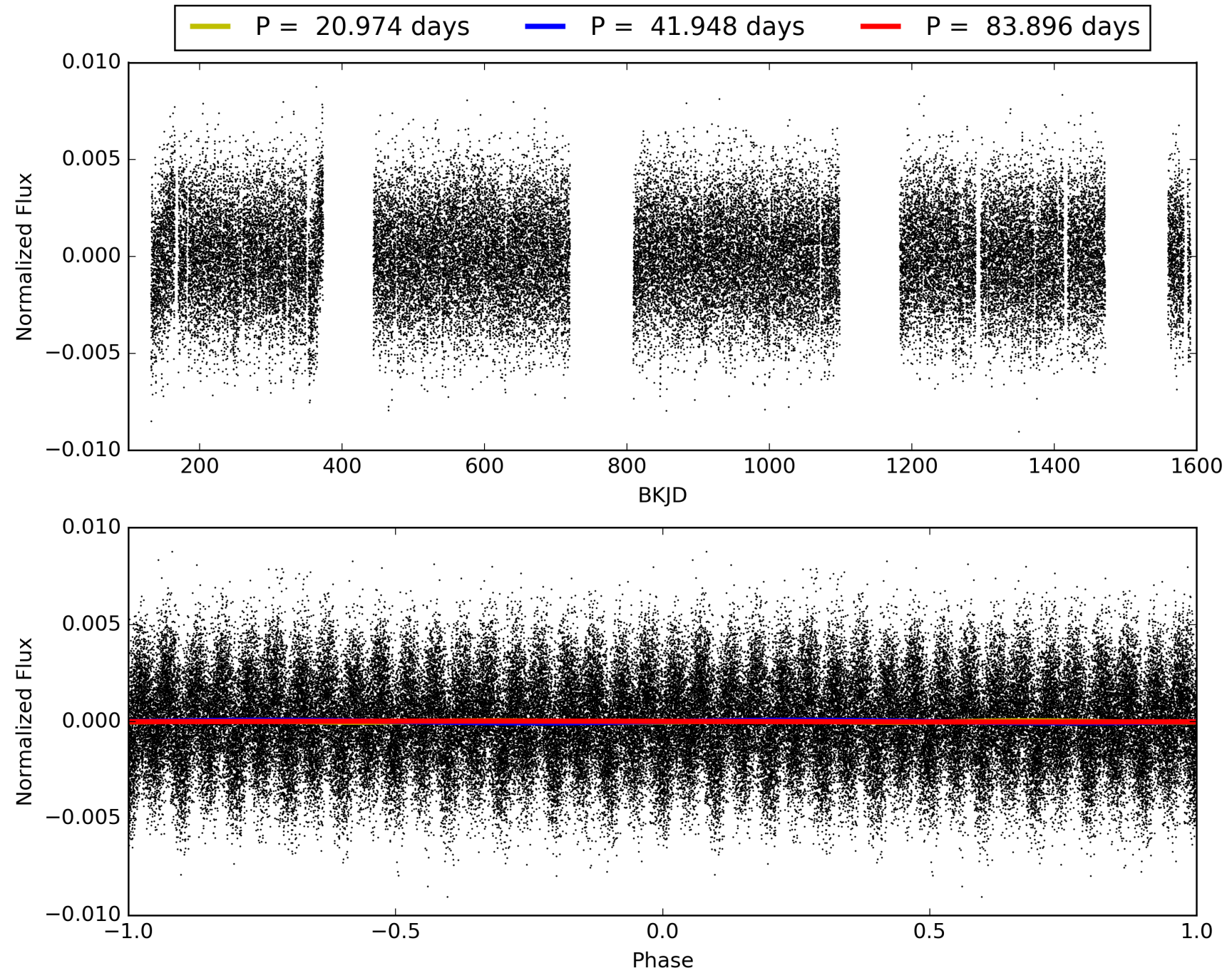
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:18:32 Z

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

TCE 011954651-07, PDC Light Curves

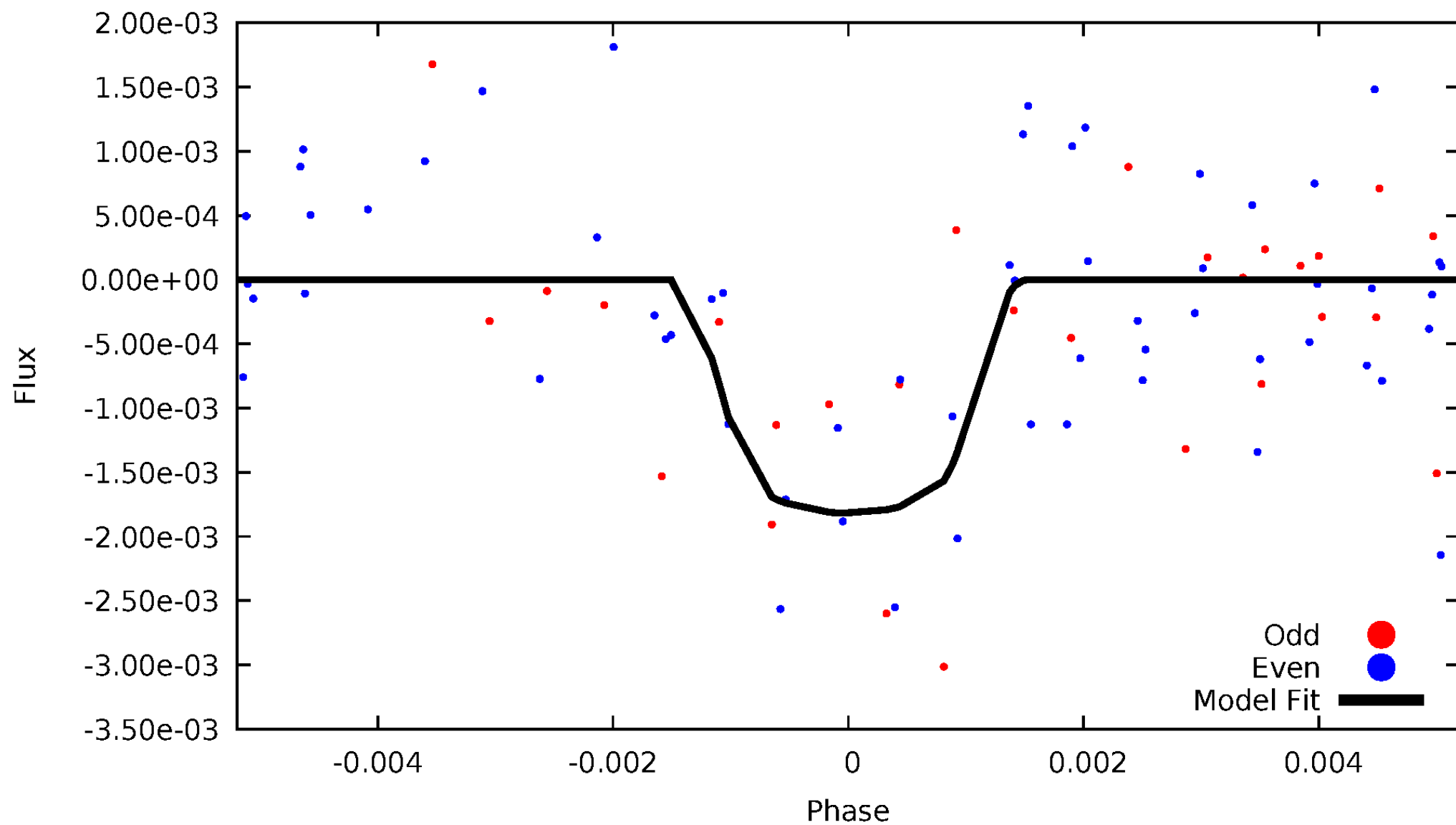


TCE 011954651-07



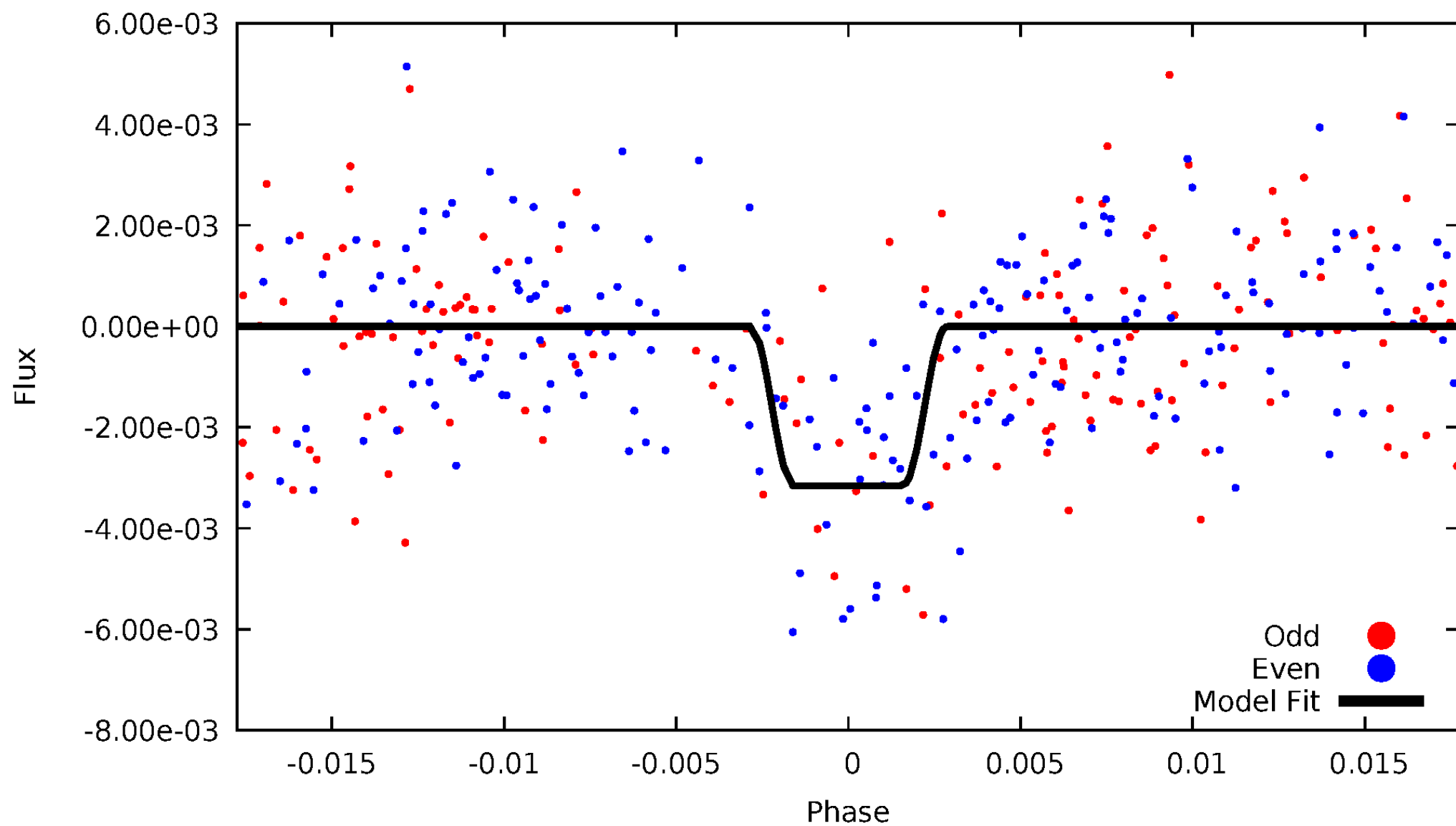
DV Odd/Even

TCE 011954651-07



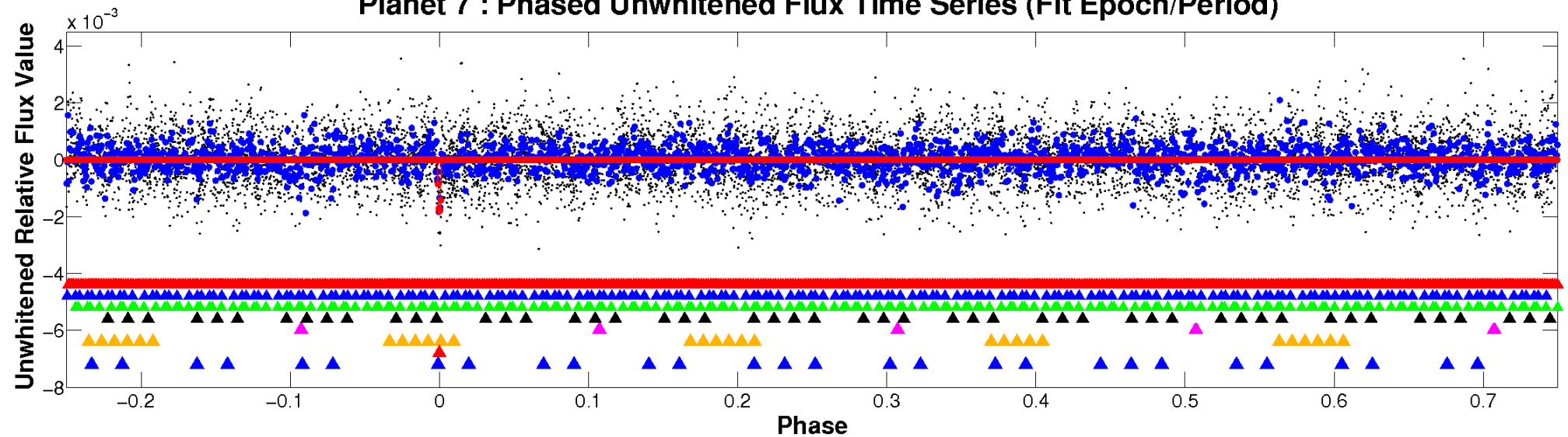
ALT Odd/Even

TCE 011954651-07

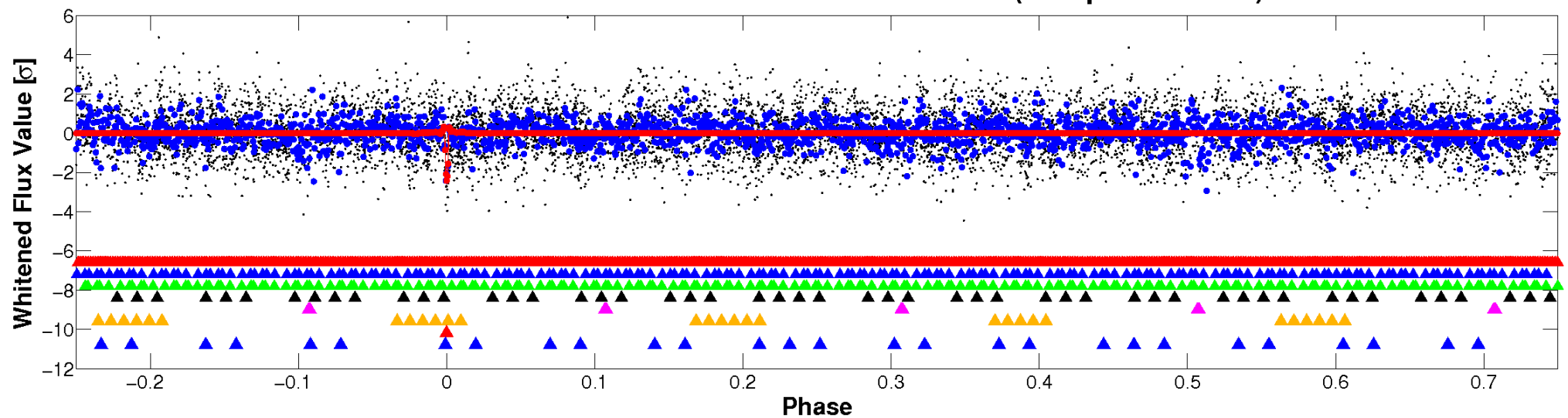


Non-Whitened Vs. Whitened Light Curve

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

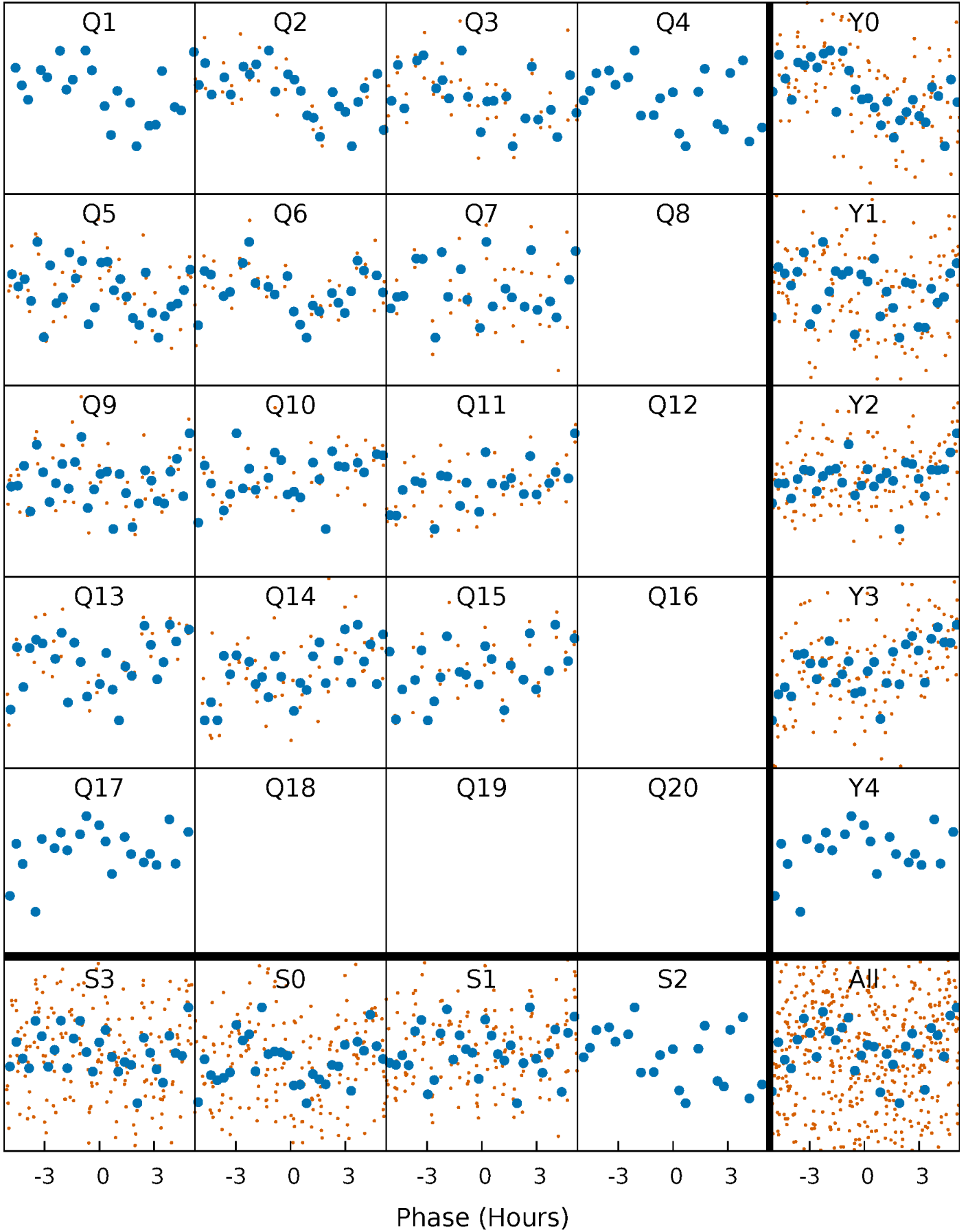


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



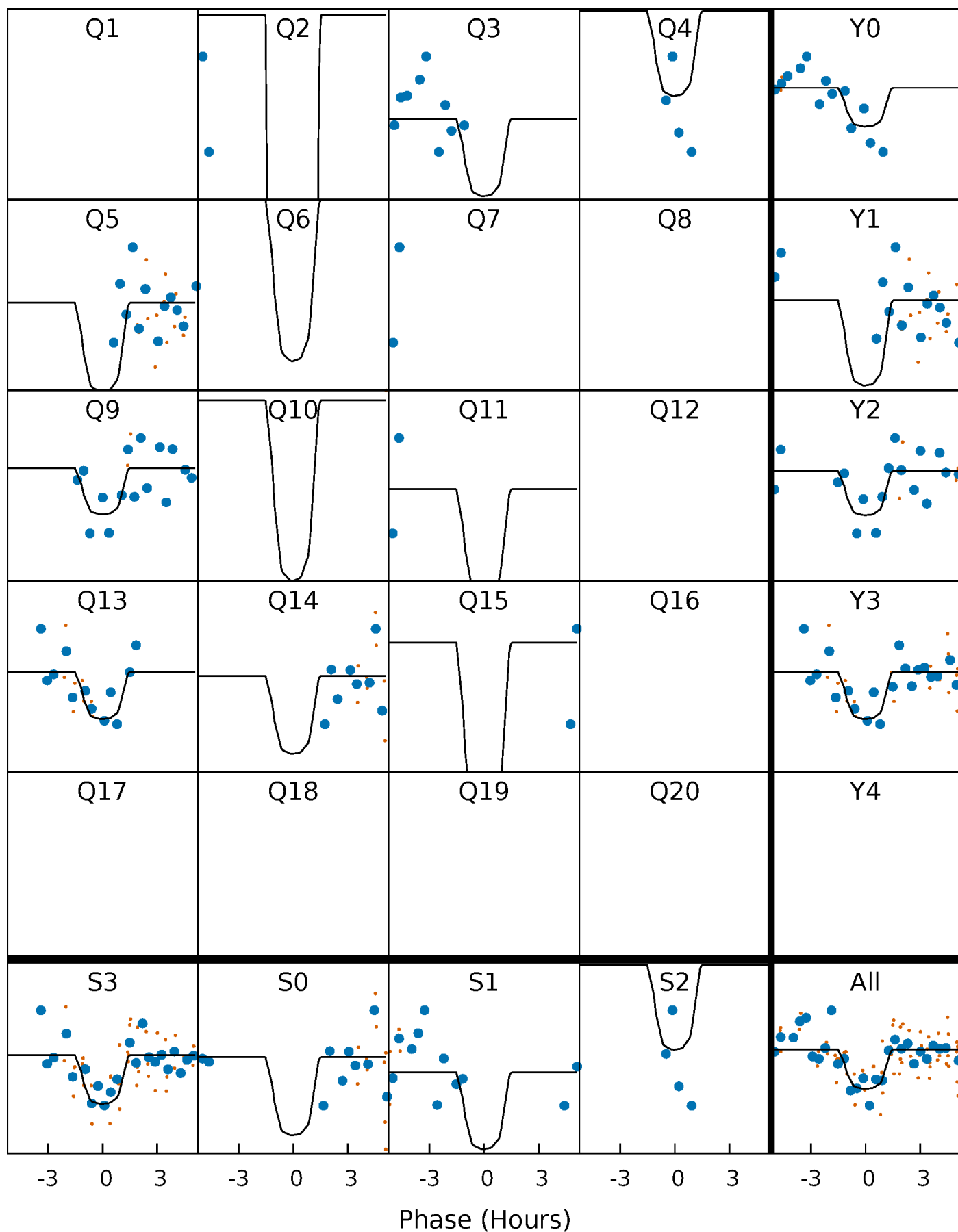
PDC Quarter-Phased Transit Curves

TCE 011954651-07 $P = 41.948088$ Days $T_0 = 150.285561$ (BKJD)



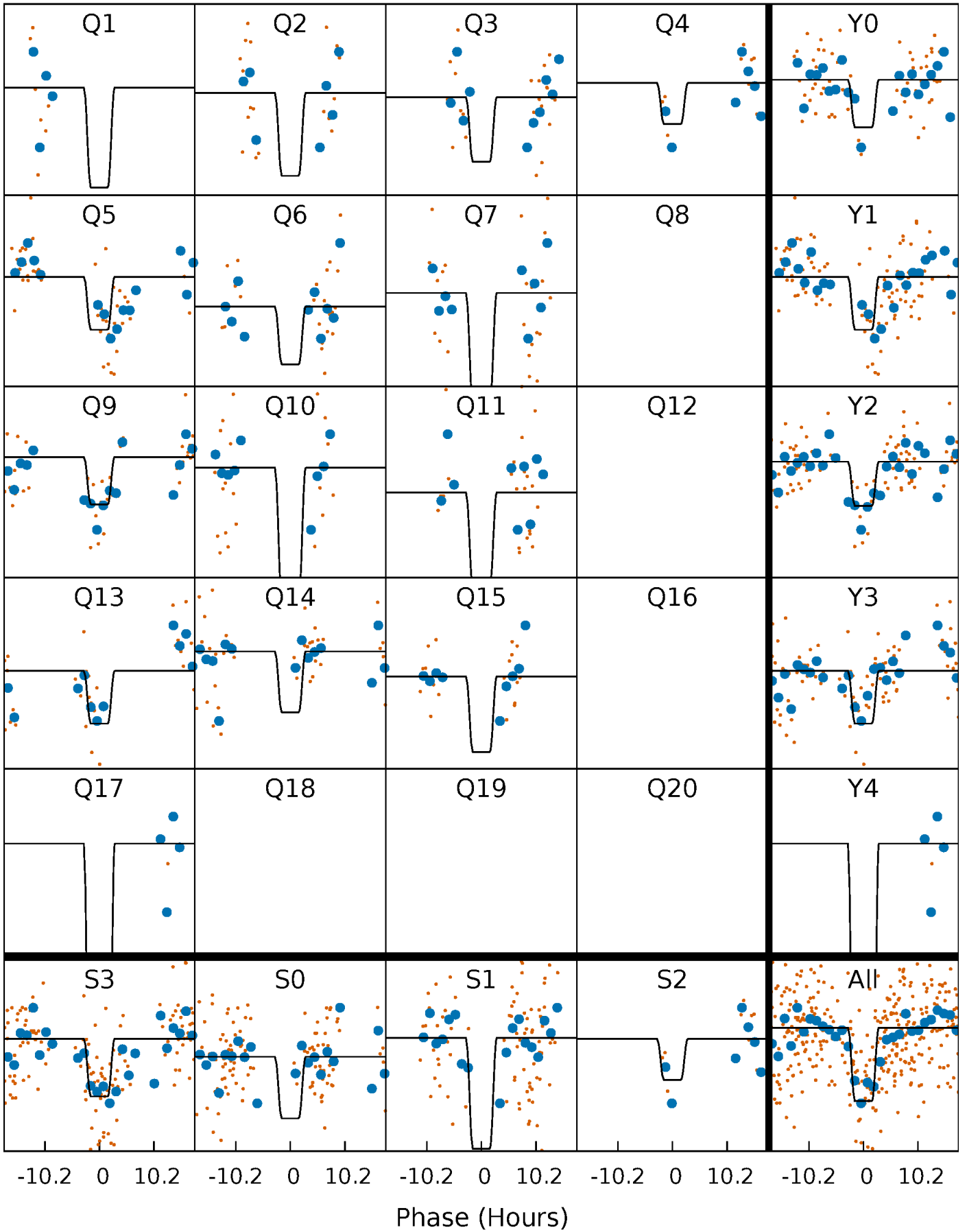
DV Quarter-Phased Transit Curves

TCE 011954651-07 P= 41.948088 Days $T_0=150.285561$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

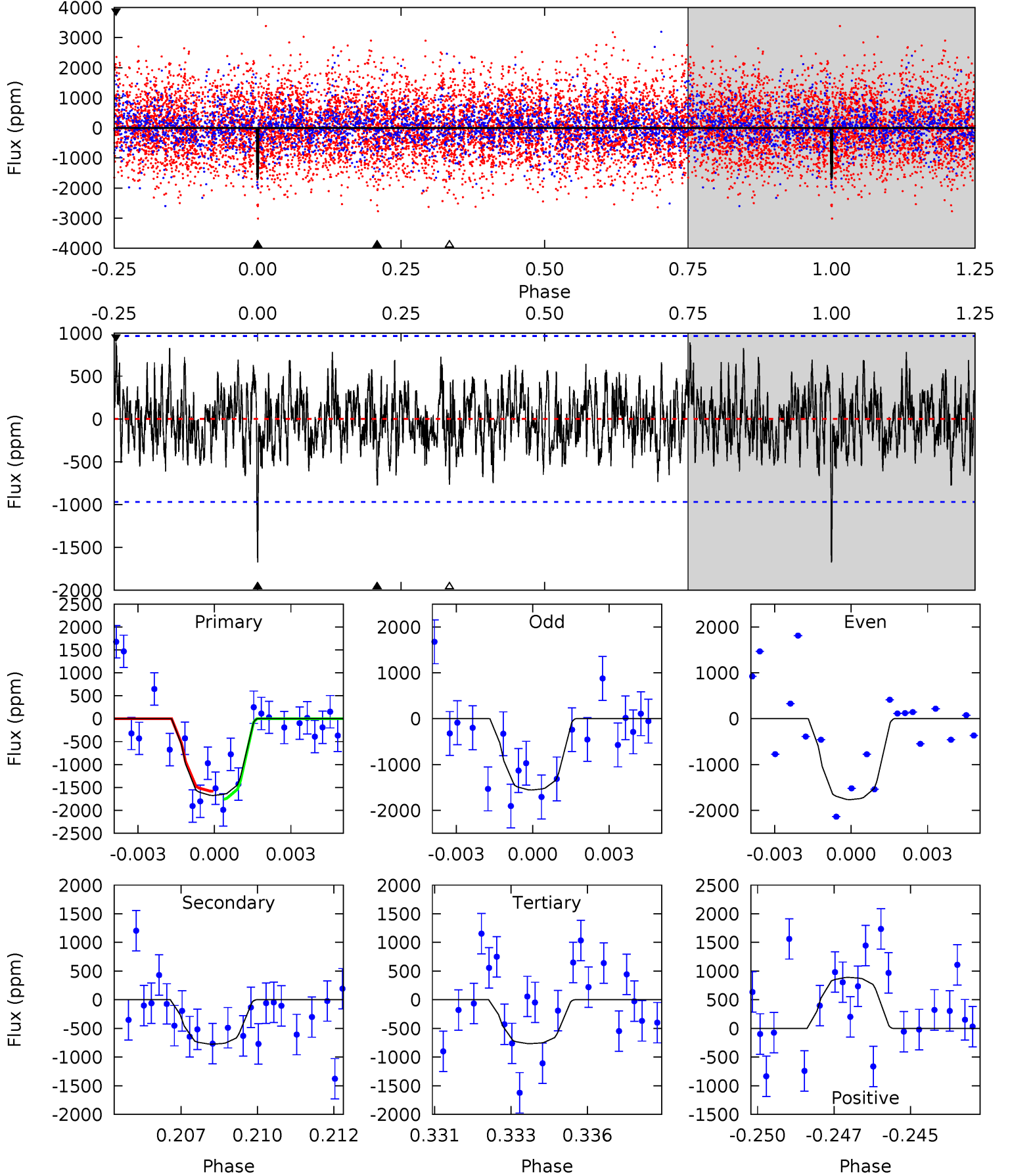
TCE 011954651-07 $P = 41.947404$ Days $T_0 = 150.339907$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-07, P = 41.948088 Days, E = 108.337473 Days

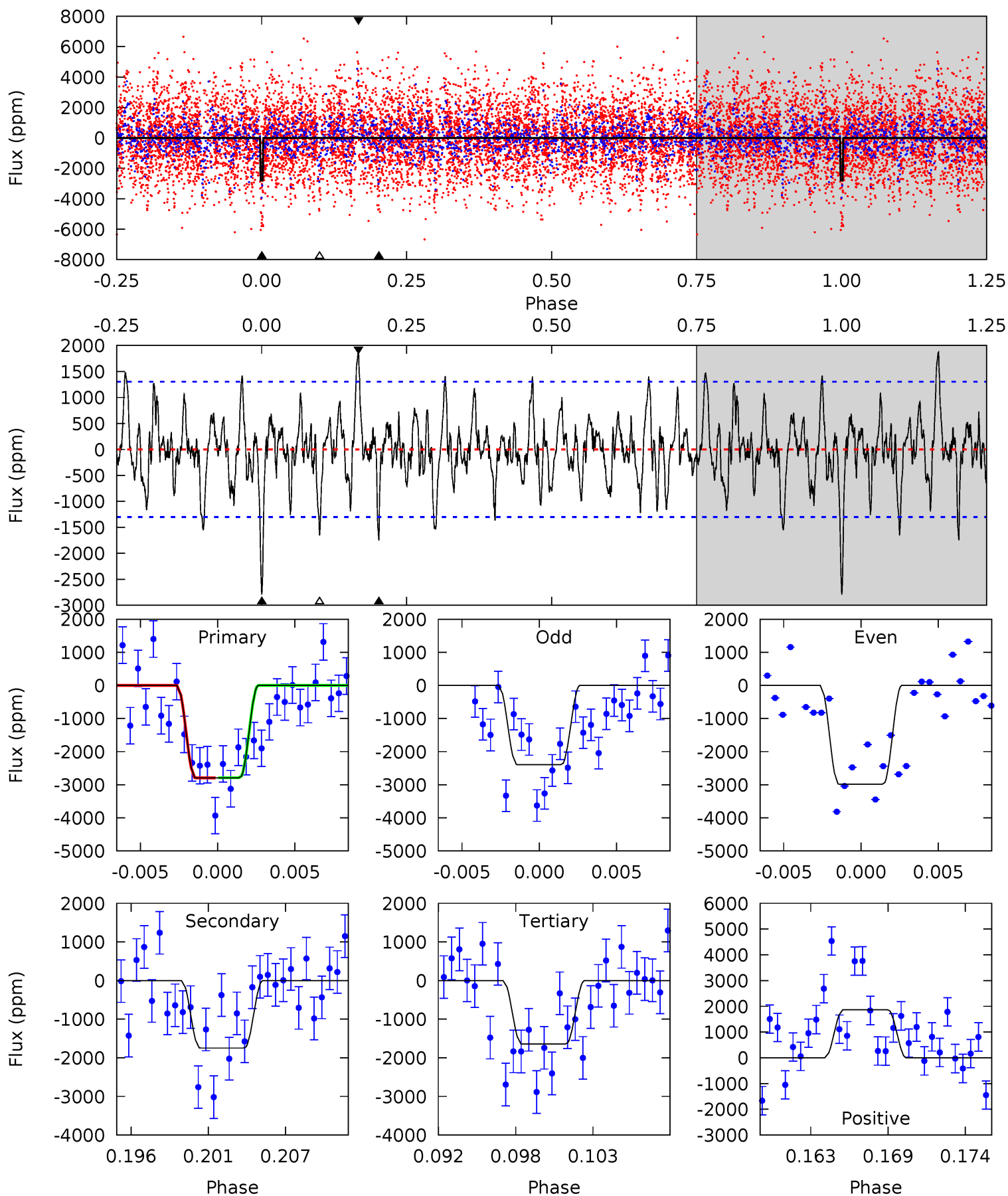
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.13	4.22	4.17	4.85	5.27	3.00	1.47	4.95	4.27	0.05	-0.63	0.57	0.85	0.35	0.48



Alt Model-Shift Uniqueness Test

011954651-07, P = 41.947404 Days, E = 108.392503 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	6.90	6.49	7.38	5.14	2.78	1.90	4.52	3.63	0.41	-0.48	1.11	1.11	0.40	0.01



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-775 ± 184	$7.98^{+3.36}_{-2.99}$	1089^{+92}_{-106}	5386^{+1357}_{-794}	406^{+681}_{-218}
Alt.	-1748 ± 253	$10.20^{+3.34}_{-3.27}$	1094^{+83}_{-102}	5845^{+1200}_{-671}	577^{+678}_{-256}

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 $A_{obs} \gg 1.0$

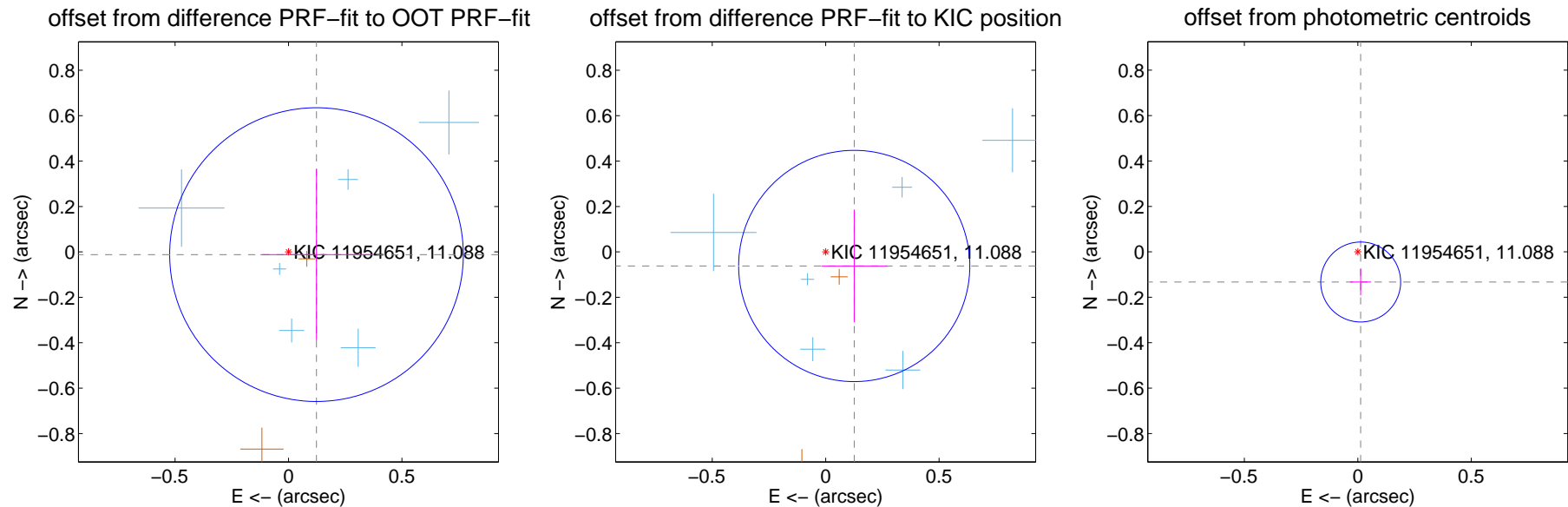
DV Centroid Data

Supplemental centroid analysis for 011954651-07. **Kepler magnitude: 11.09.** Transit SNR 8.13

There are 9 quarters with good PRF difference image offsets

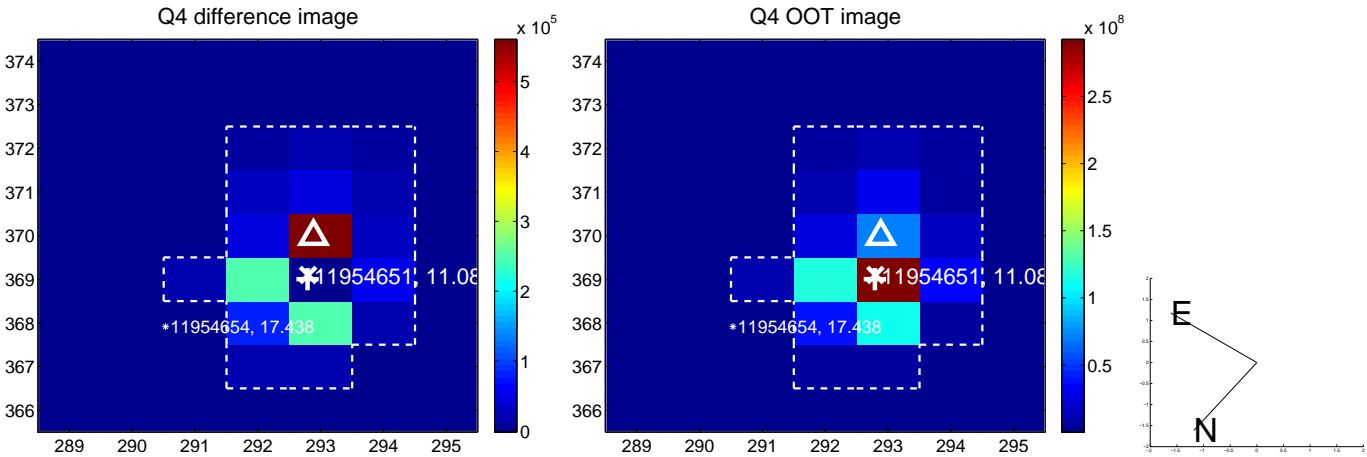
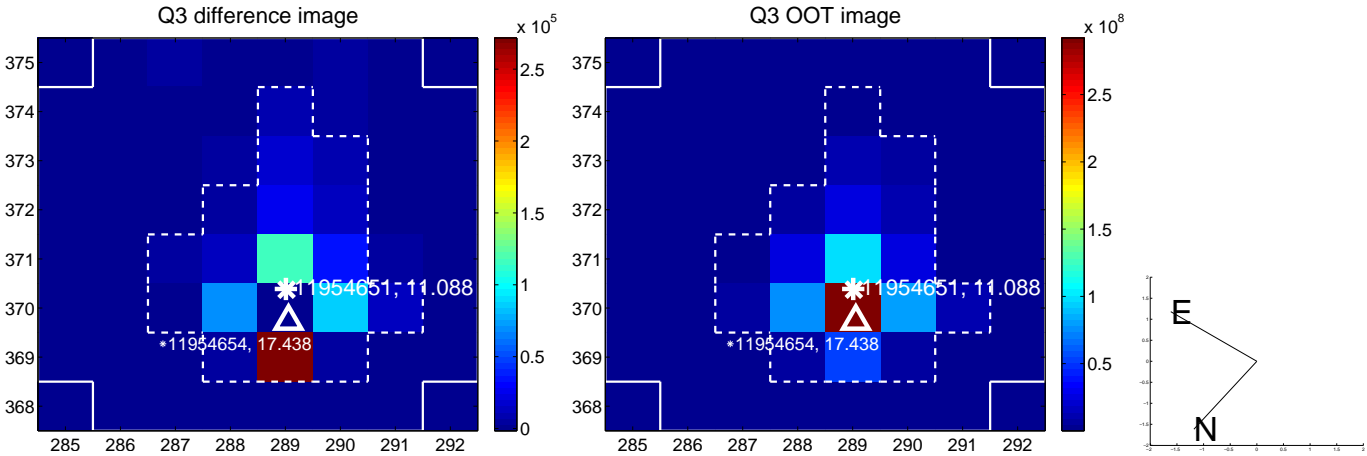
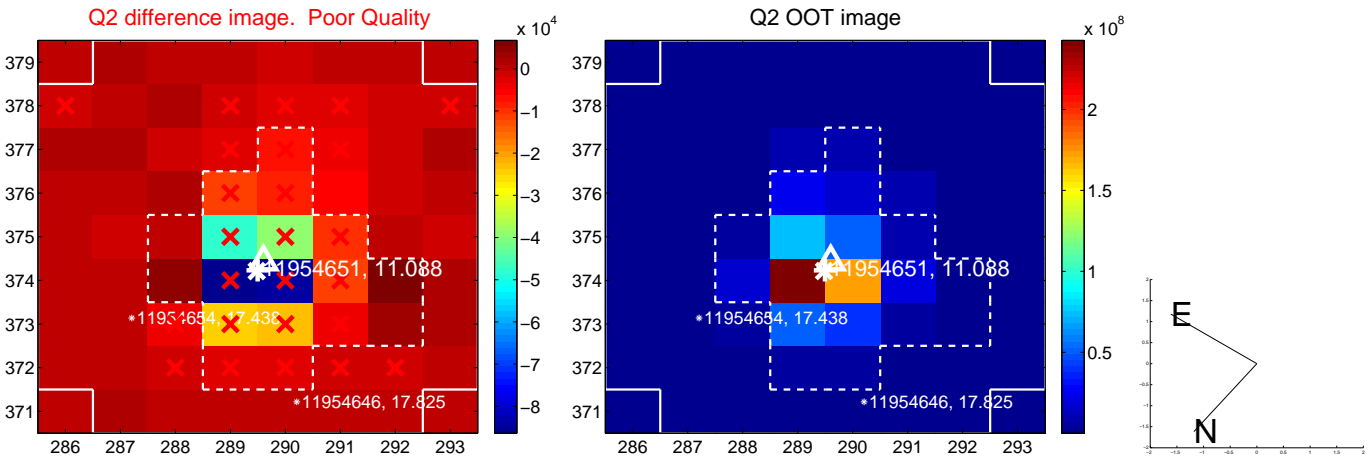
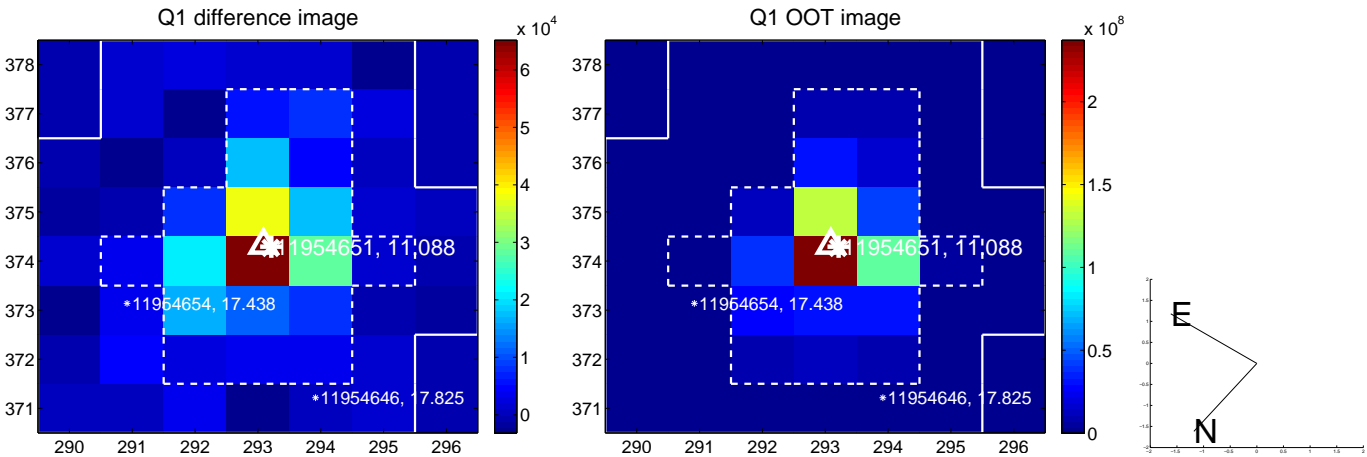
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.124 ± 0.216	0.57	-0.123 ± 0.247	-0.012 ± 0.377
PRF-fit source offset from KIC position	0.140 ± 0.170	0.83	-0.126 ± 0.144	-0.062 ± 0.248
photometric centroid source offset	0.13 ± 0.06	2.27	-0.01 ± 0.05	-0.13 ± 0.06

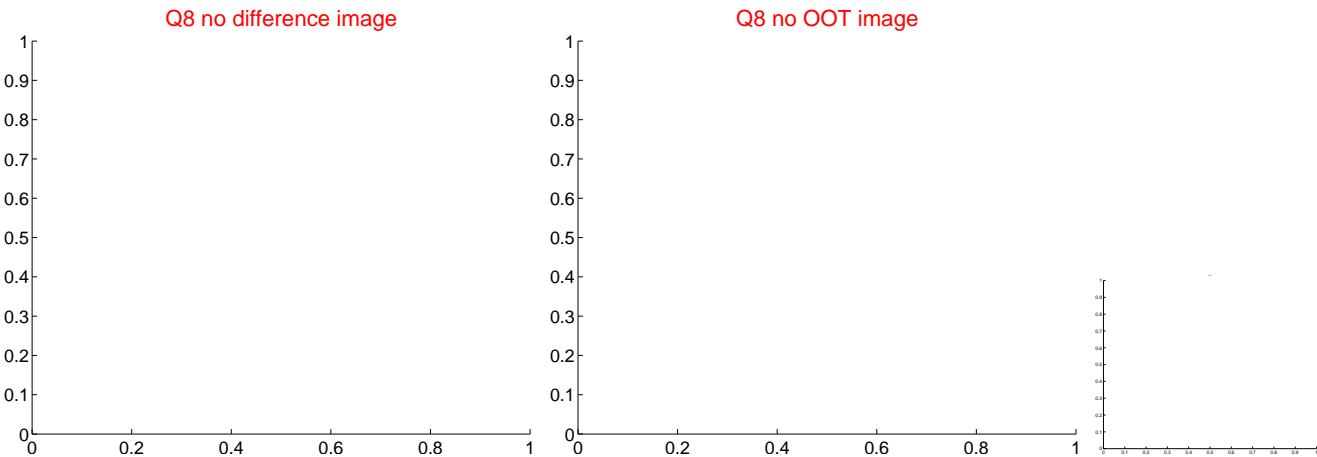
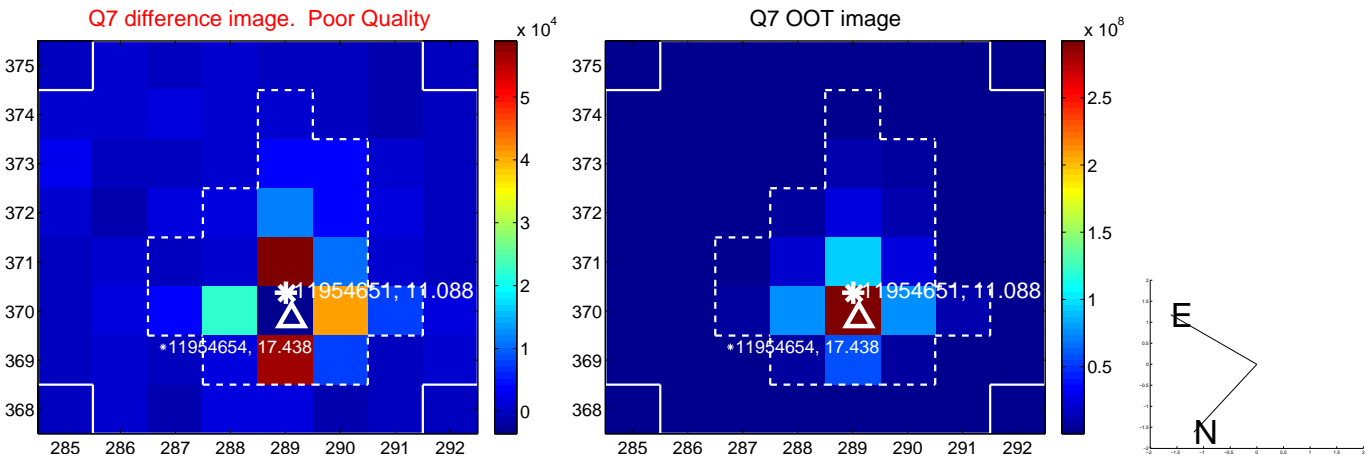
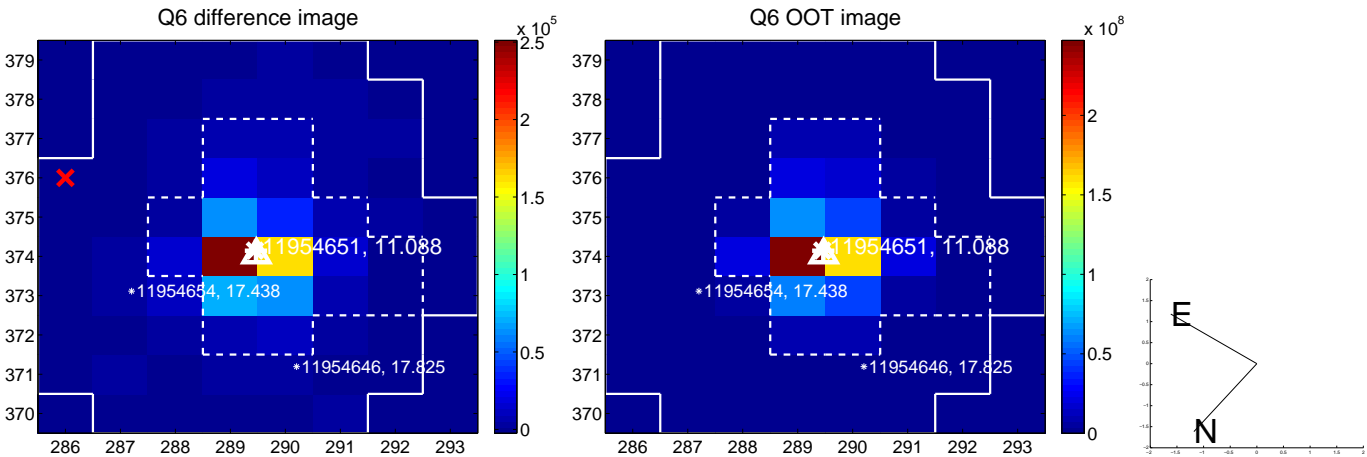
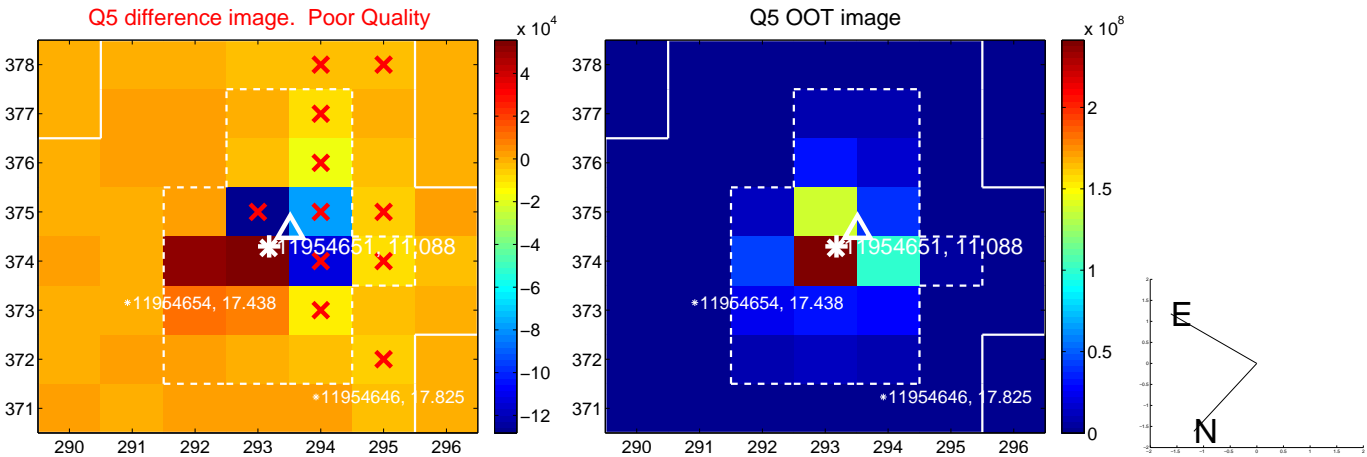


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

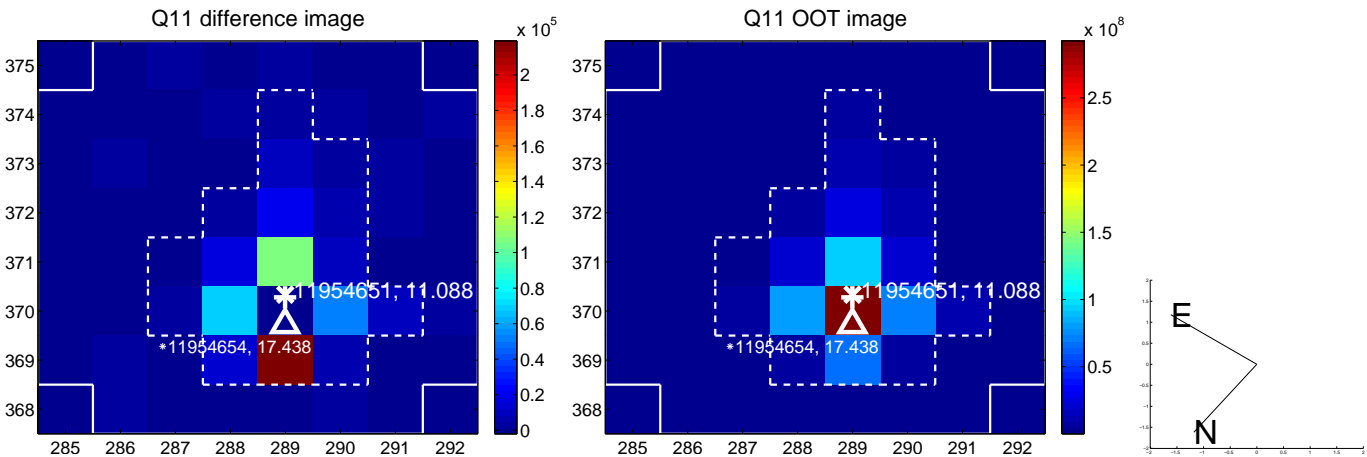
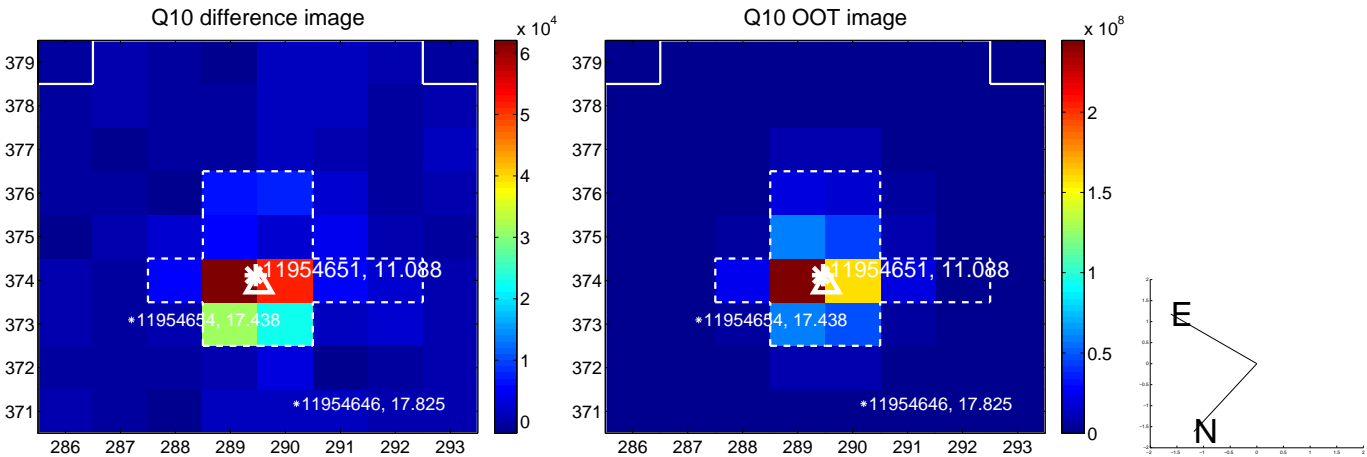
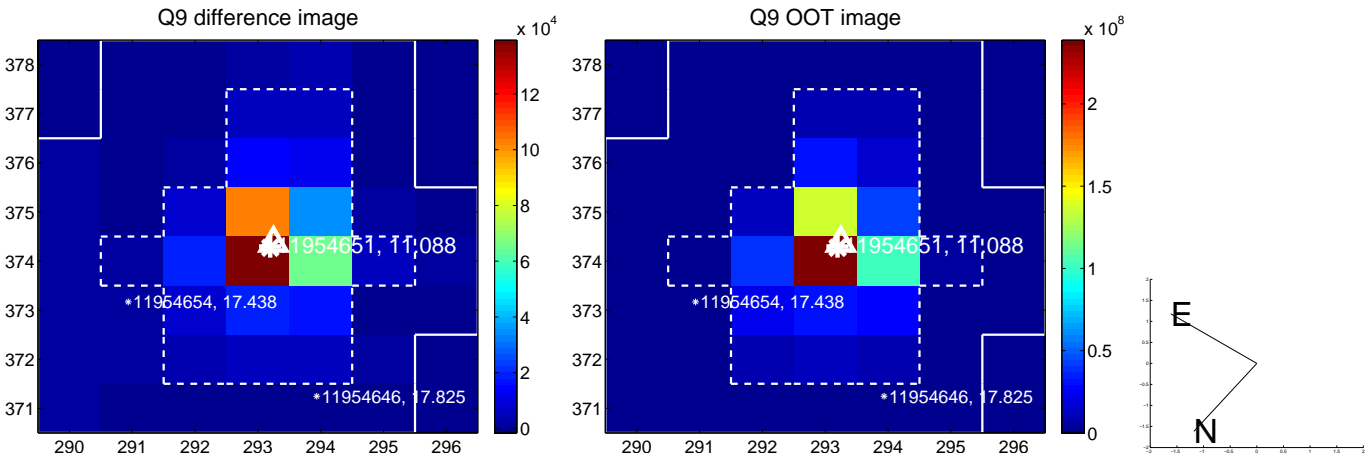
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



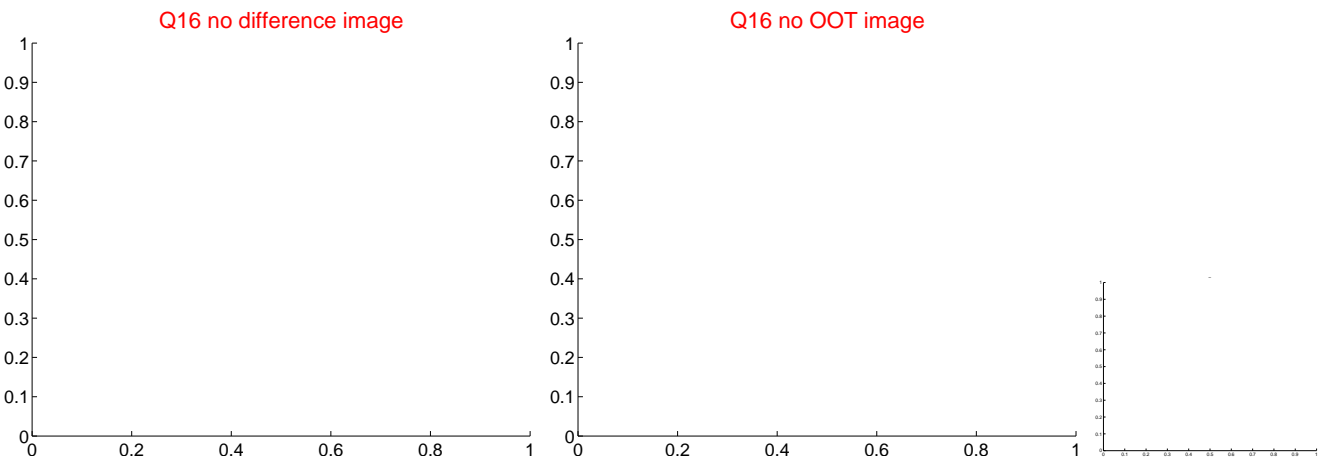
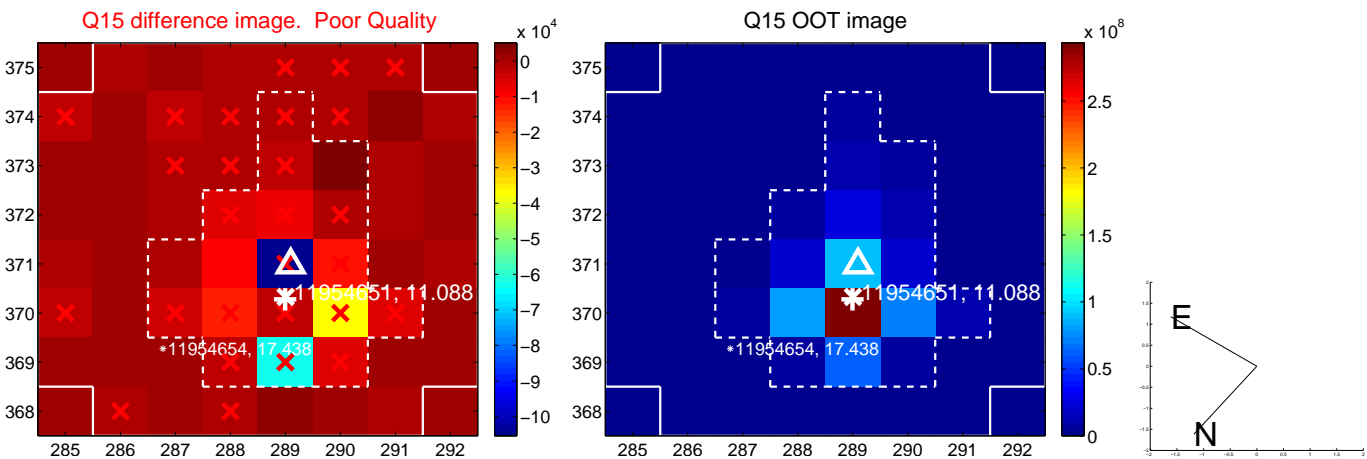
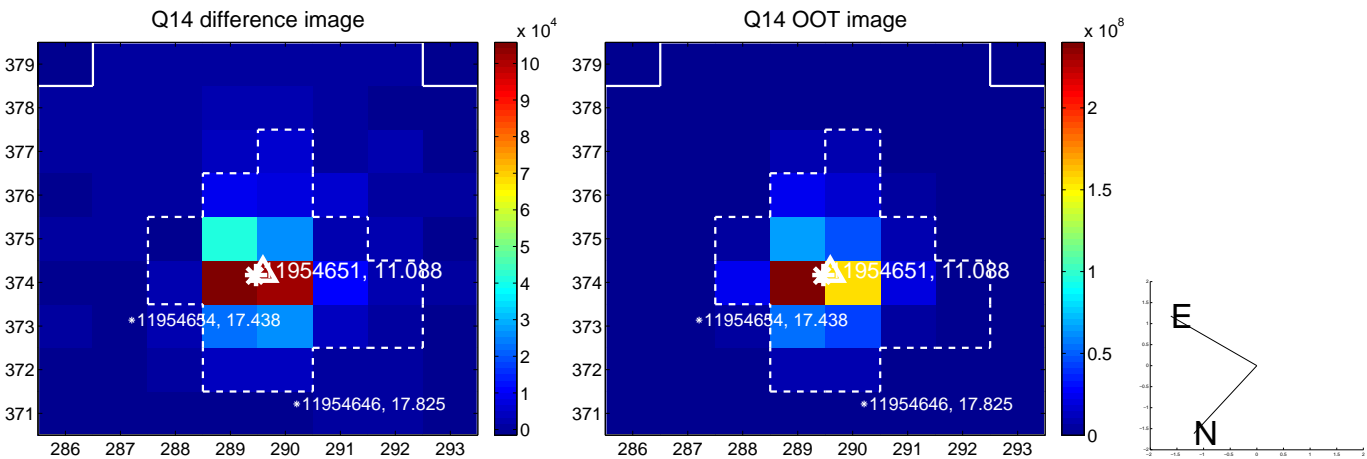
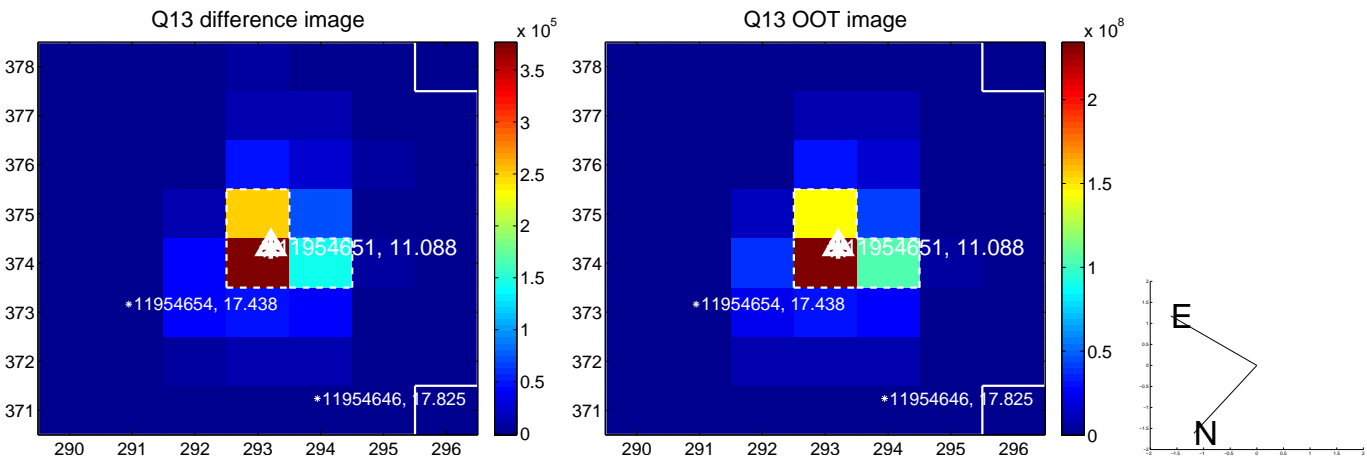
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



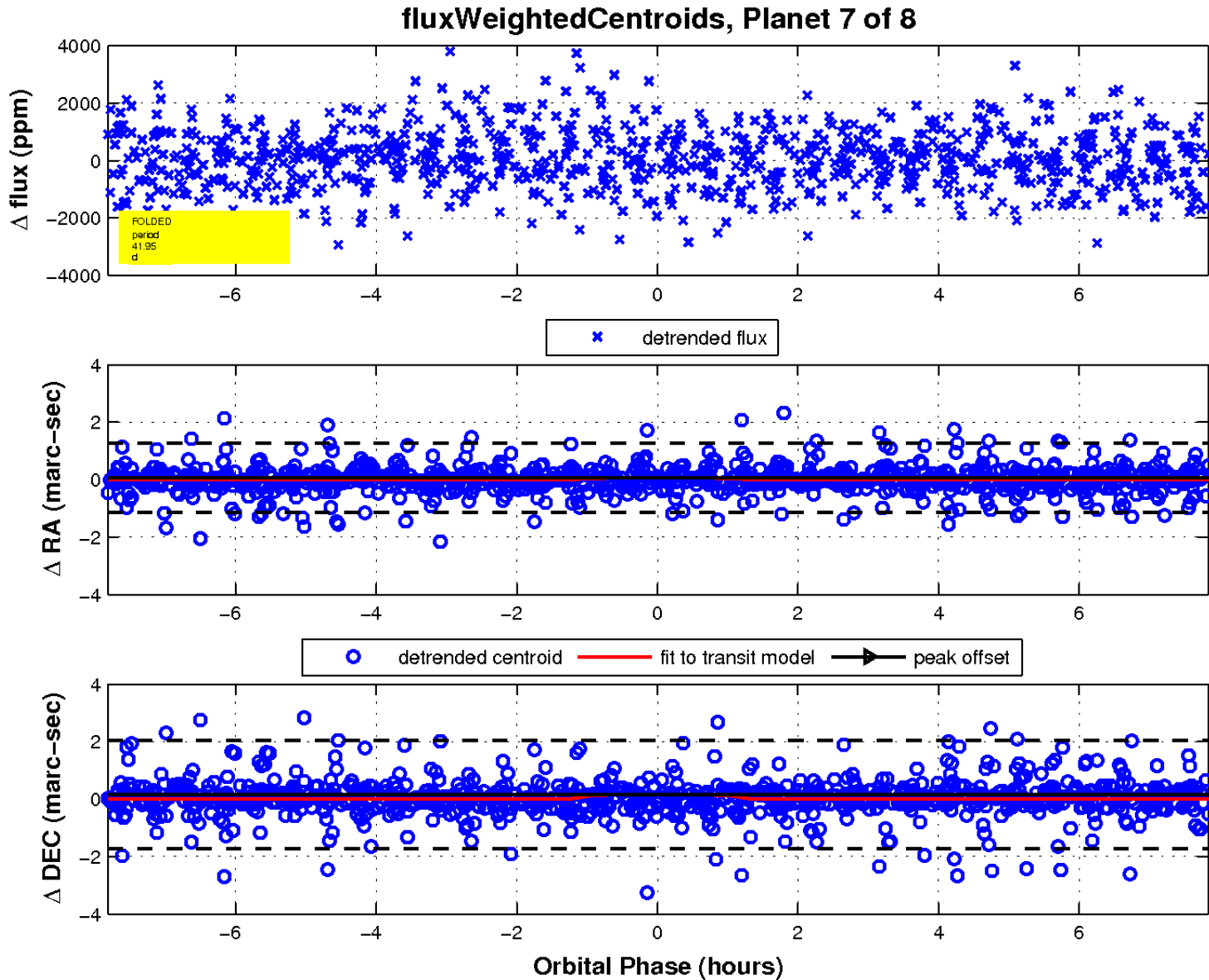
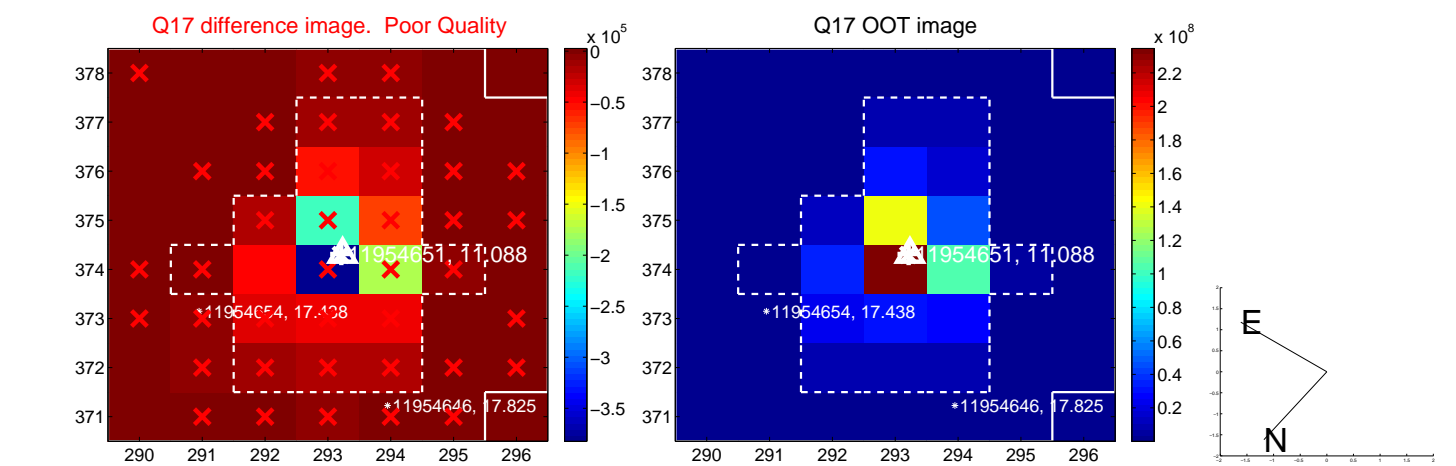
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

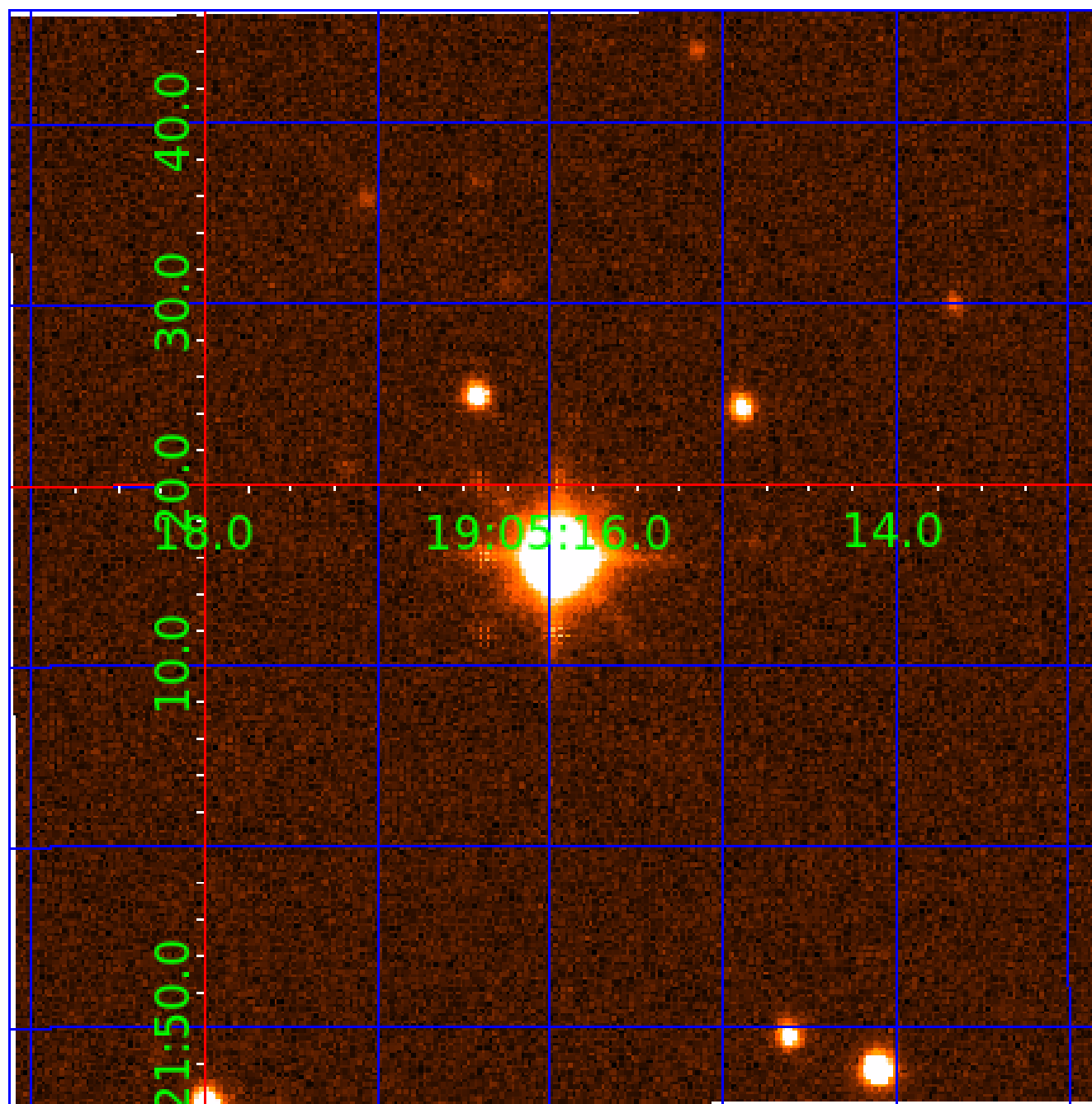


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011954651

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})
011954651-01	OBS	No	0.700292	132.024552	141.9	3.982	10.3	11.8	1.73	6810	2.39	21675.65
011954651-02	OBS	No	7.200909	133.761875	989.6	8.358	12.9	15.0	1.73	6810	10.09	969.38
011954651-03	OBS	No	7.200587	136.289486	835.7	7.495	11.9	12.9	1.73	6810	6.35	969.44
011954651-04	OBS	No	28.803844	132.031813	1159.9	3.834	8.6	8.2	1.73	6810	9.99	152.67
011954651-05	OBS	No	16.779839	137.982768	703.6	5.791	7.9	8.2	1.73	6810	4.92	313.78
011954651-06	OBS	No	50.409778	173.913015	913.5	3.079	7.7	7.8	1.73	6810	5.88	72.39
011954651-07	OBS	No	41.948088	150.285561	1818.2	2.615	8.2	8.1	1.73	6810	8.28	92.48
011954651-08	OBS	No	51.694463	159.140573	59.9	6.000	7.8	-1.0	1.73	6810	1.35	70.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011954651-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011954651-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
011954651-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011954651-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
011954651-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011954651-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011954651-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

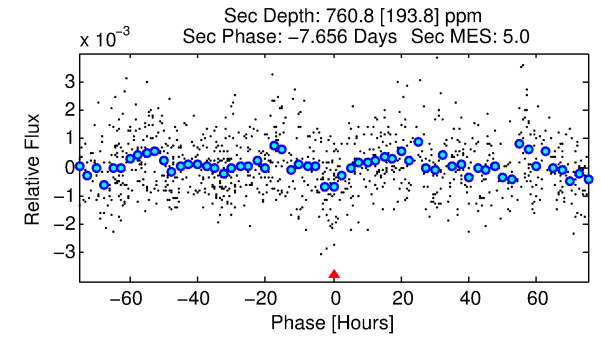
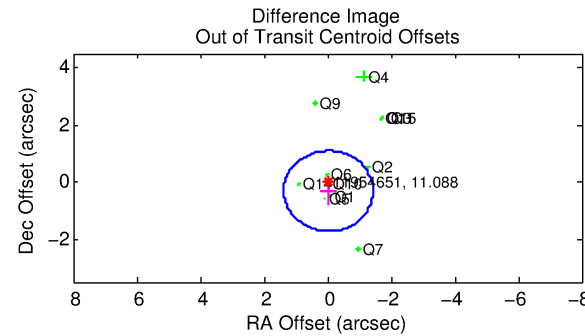
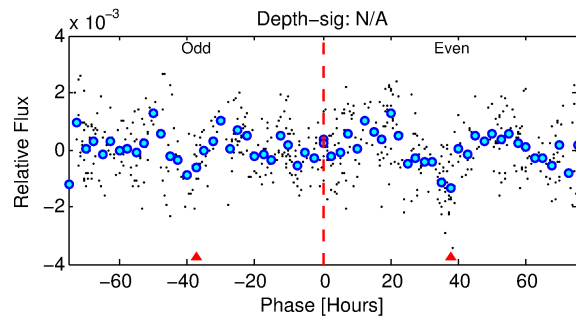
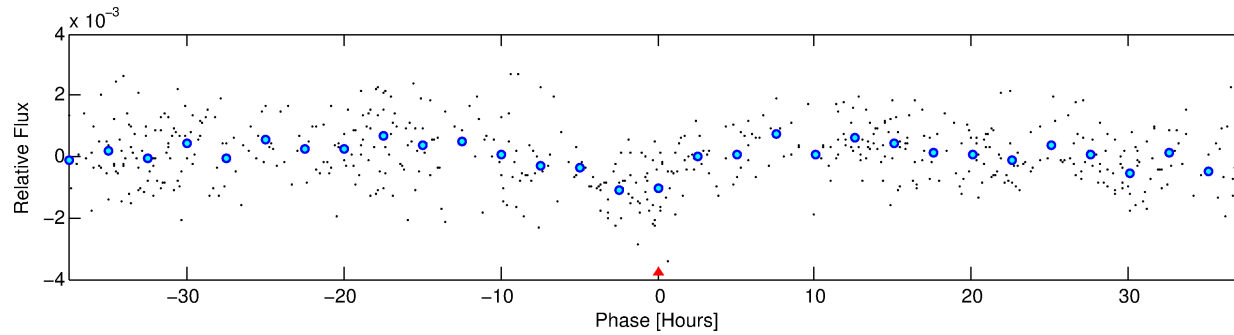
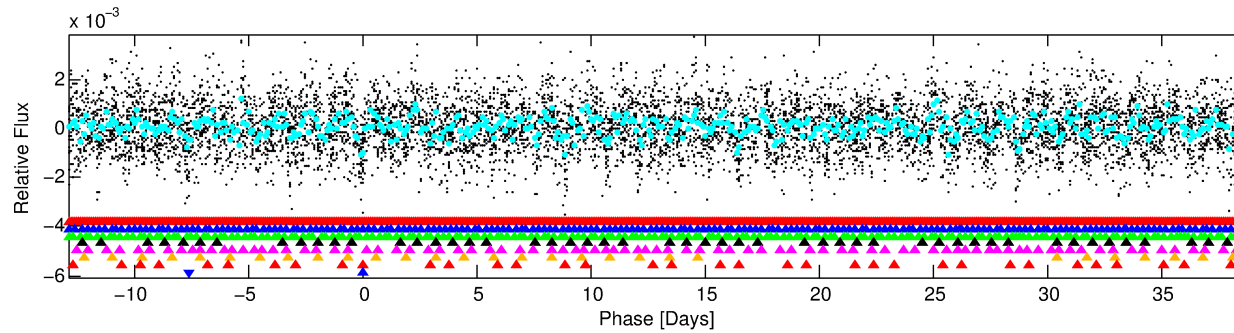
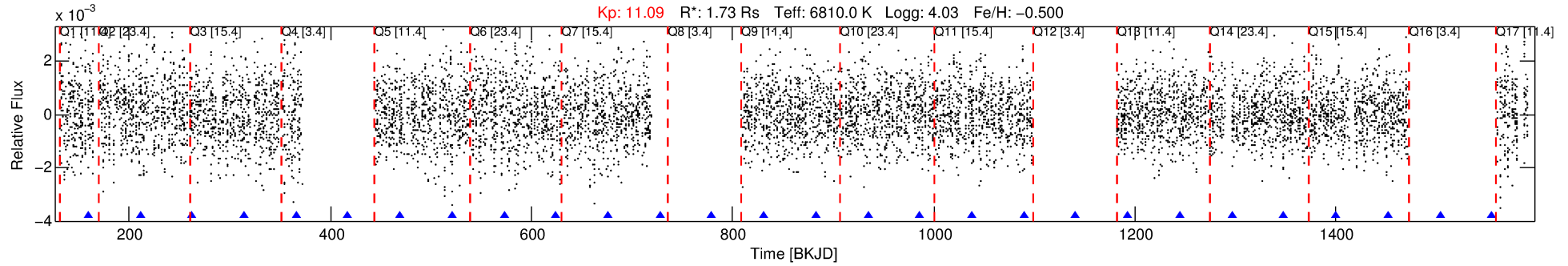
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011954651-08

No Significant Match Found

DV One-Page Summary

KIC: 11954651 Candidate: 8 of 8 Period: 51.694 d



TPS TCE Results:

Period = 51.69446 d
Epoch = 159.1406 BKJD

DV fit results are unavailable

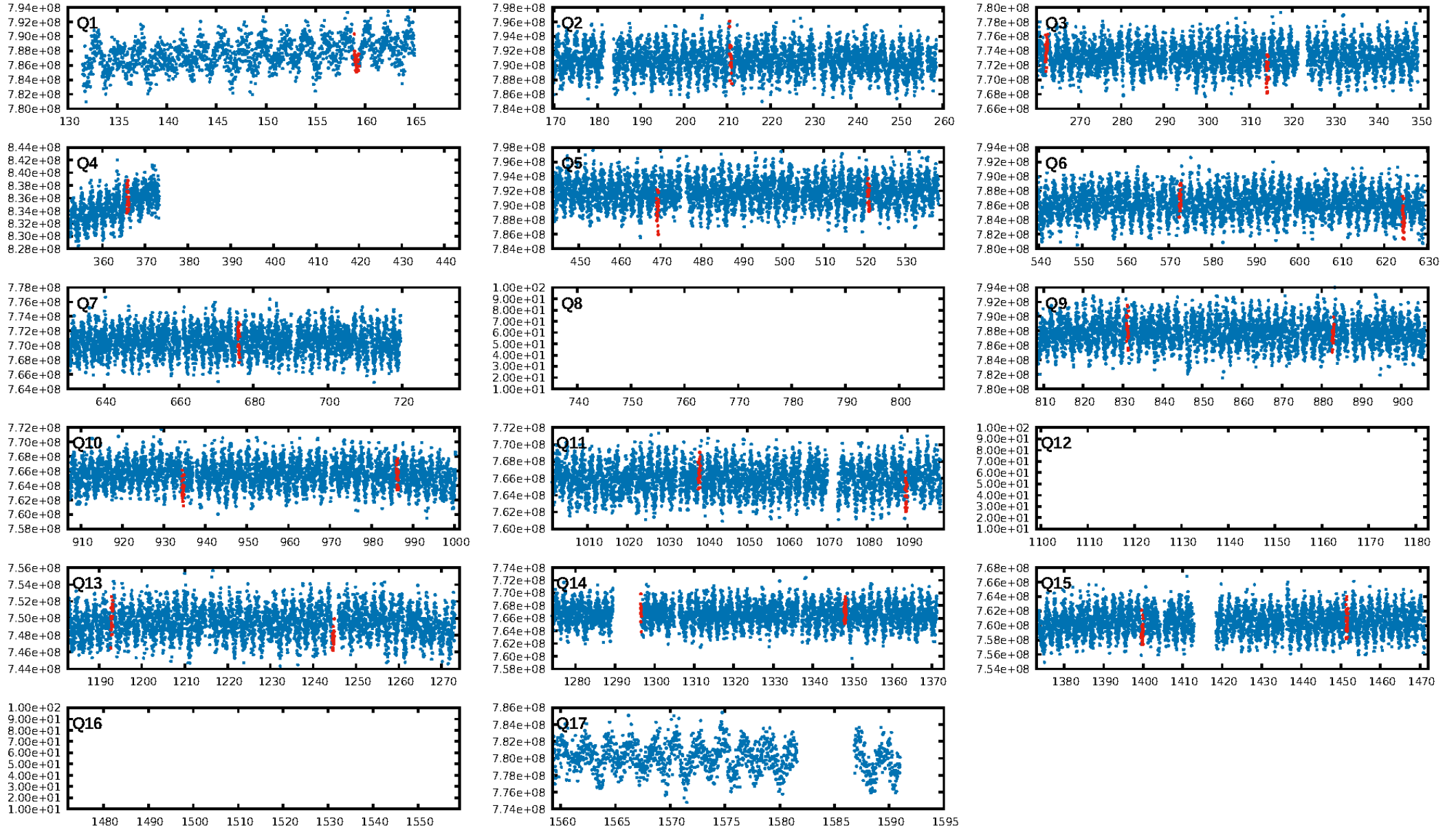
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.57 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 1.49
Centroid-sig: 53.0%
Centroid-so: 0.072 arcsec [1.32 σ]
OotOffset-rm: 0.314 arcsec [0.67 σ]
KicOffset-rm: 0.397 arcsec [0.80 σ]
OotOffset-st: 4/4/1/3 [12]
KicOffset-st: 4/4/1/3 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 0.00 [0/12]

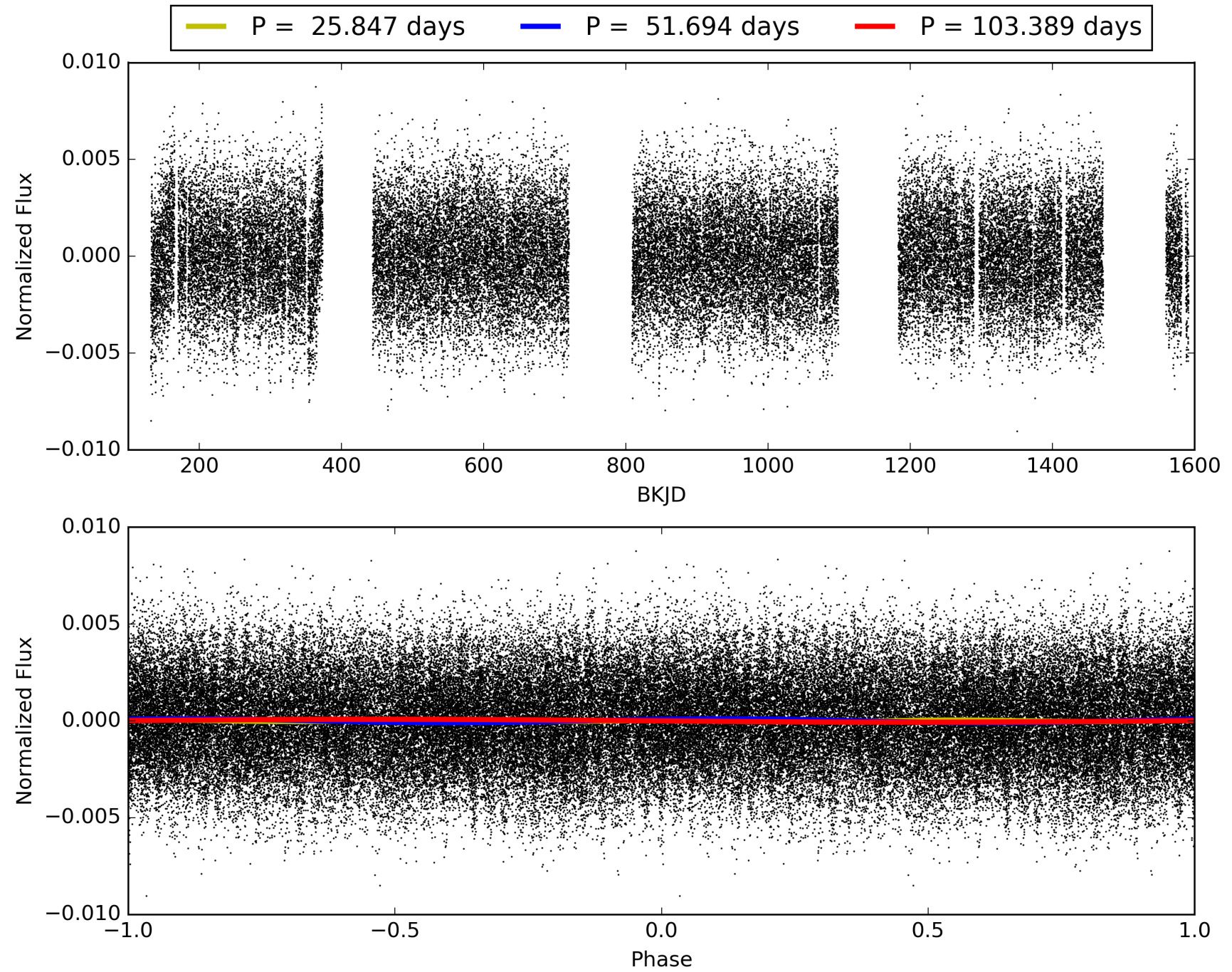
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:18:36 Z

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

TCE 011954651-08, PDC Light Curves

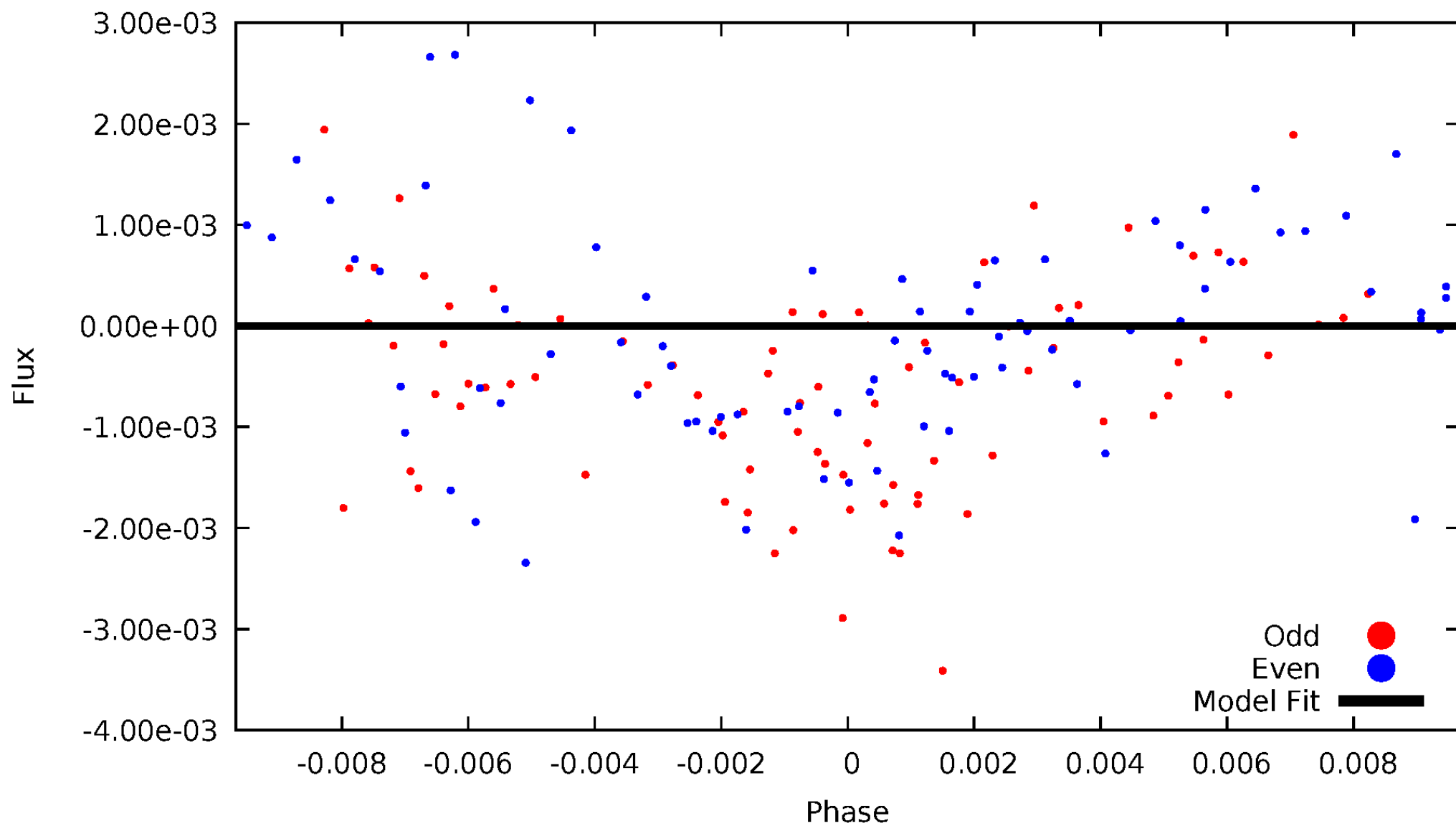


TCE 011954651-08



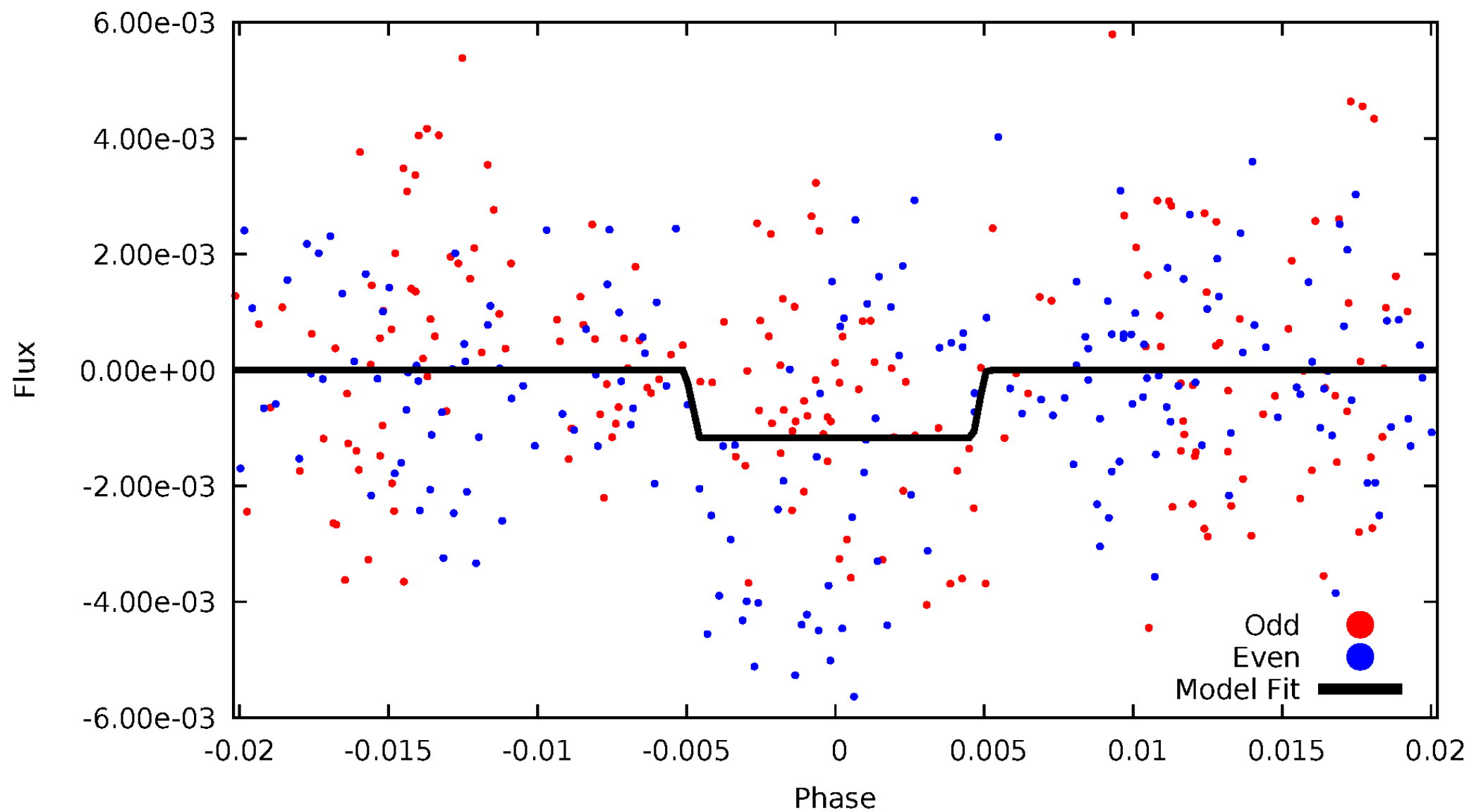
DV Odd/Even

TCE 011954651-08



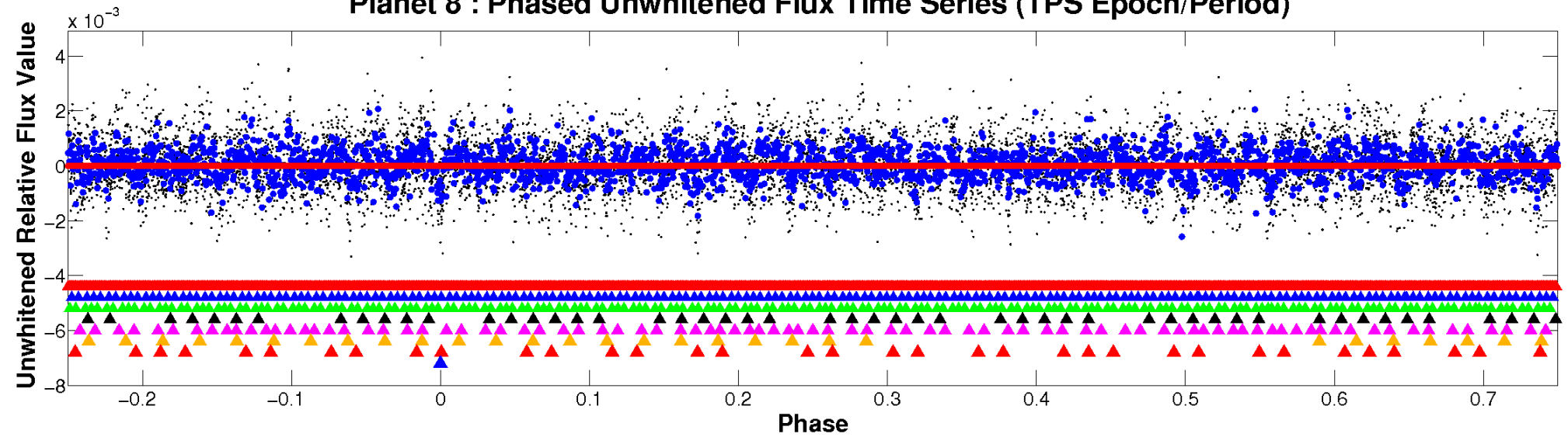
ALT Odd/Even

TCE 011954651-08

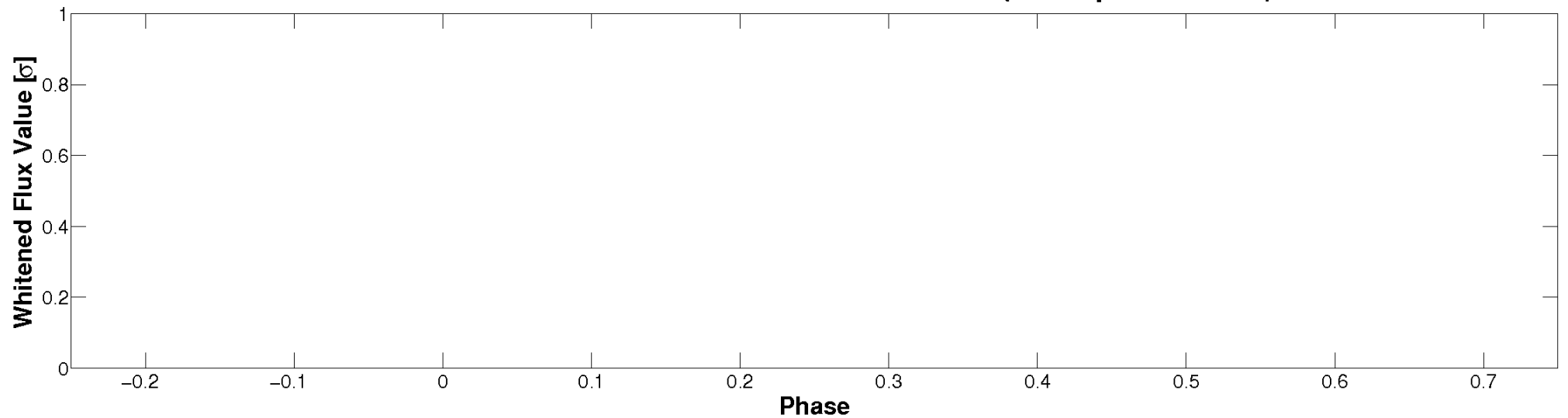


Non-Whitened Vs. Whitened Light Curve

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

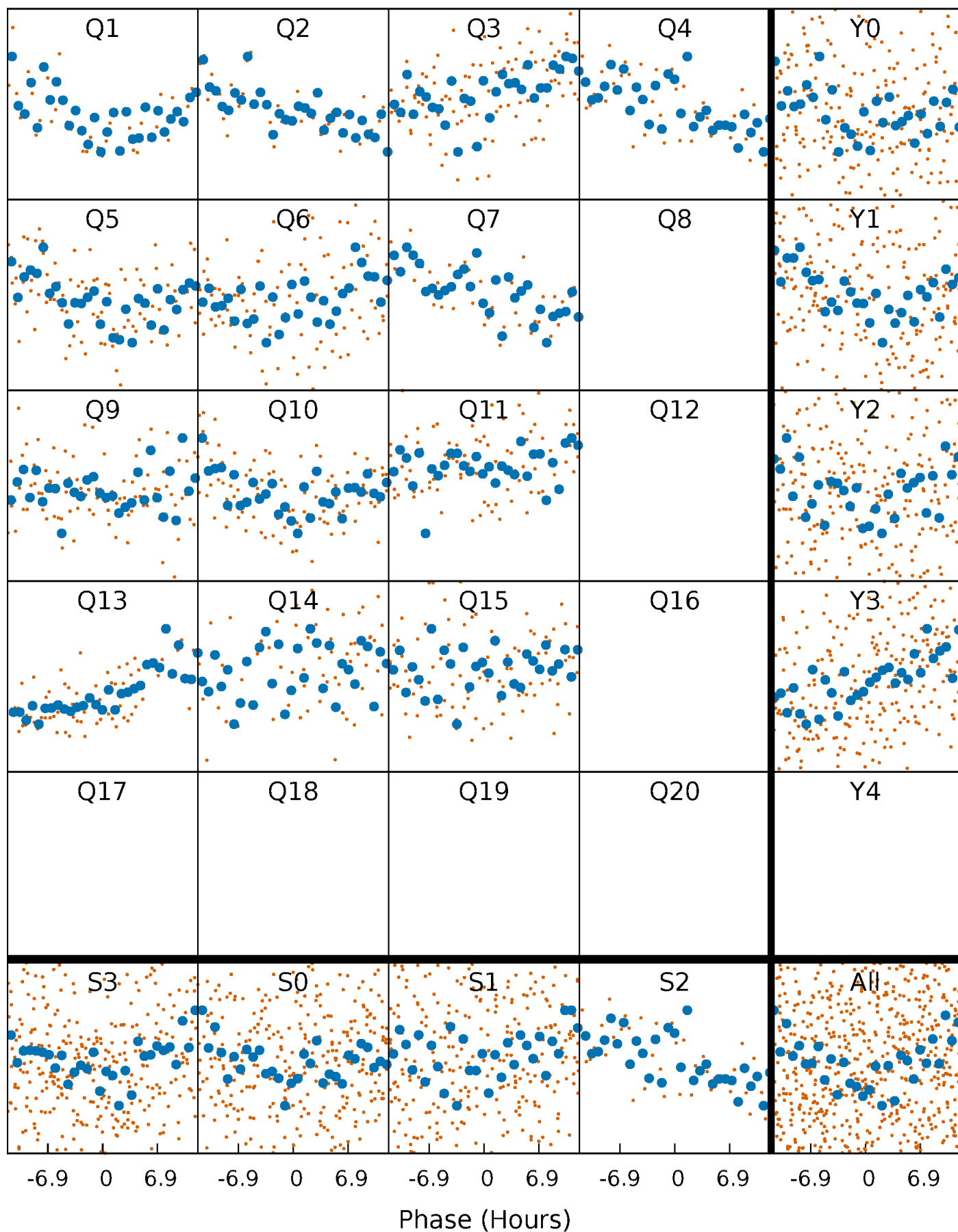


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



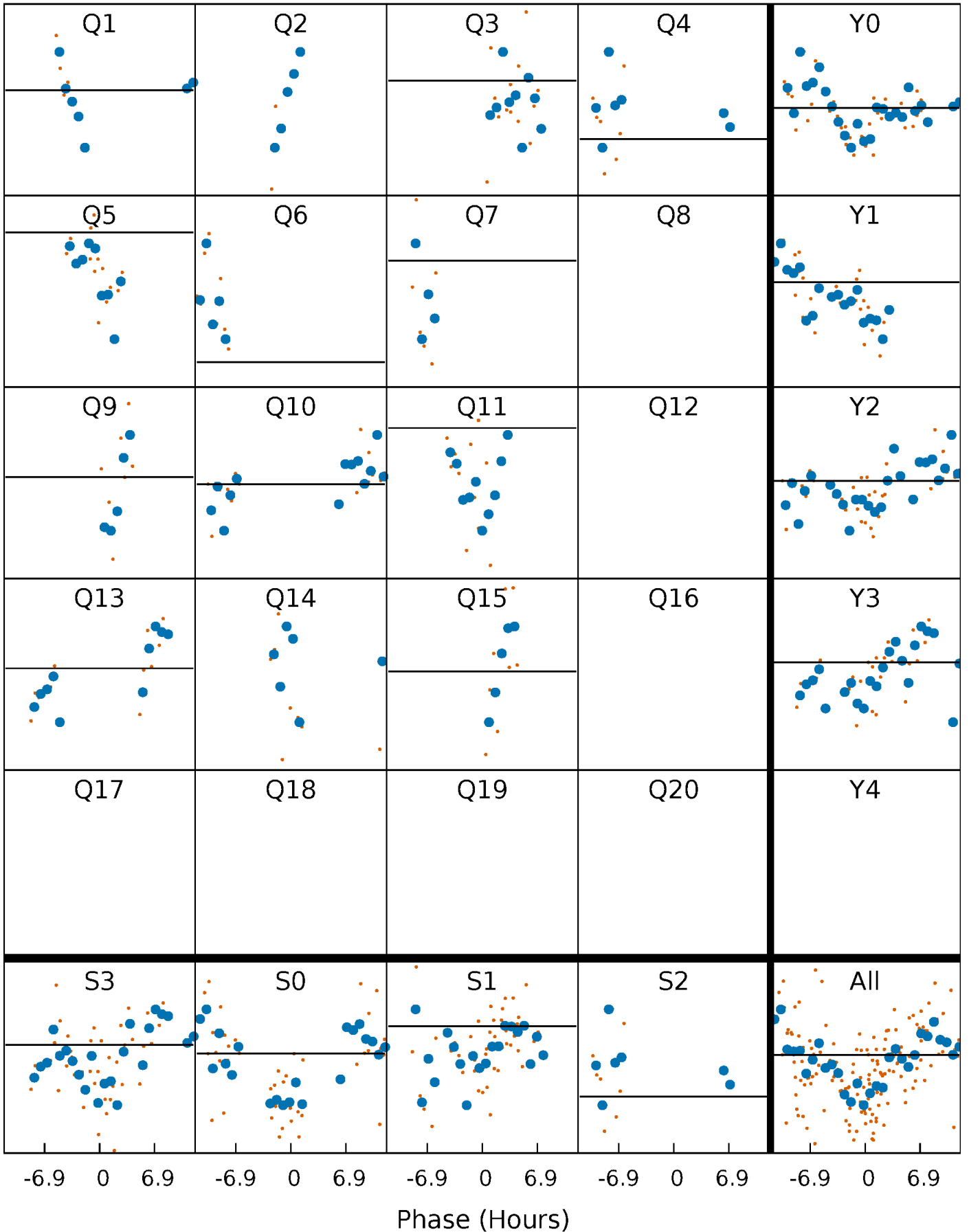
PDC Quarter-Phased Transit Curves

TCE 011954651-08 P= 51.694463 Days $T_0=159.140572$ (BKJD)



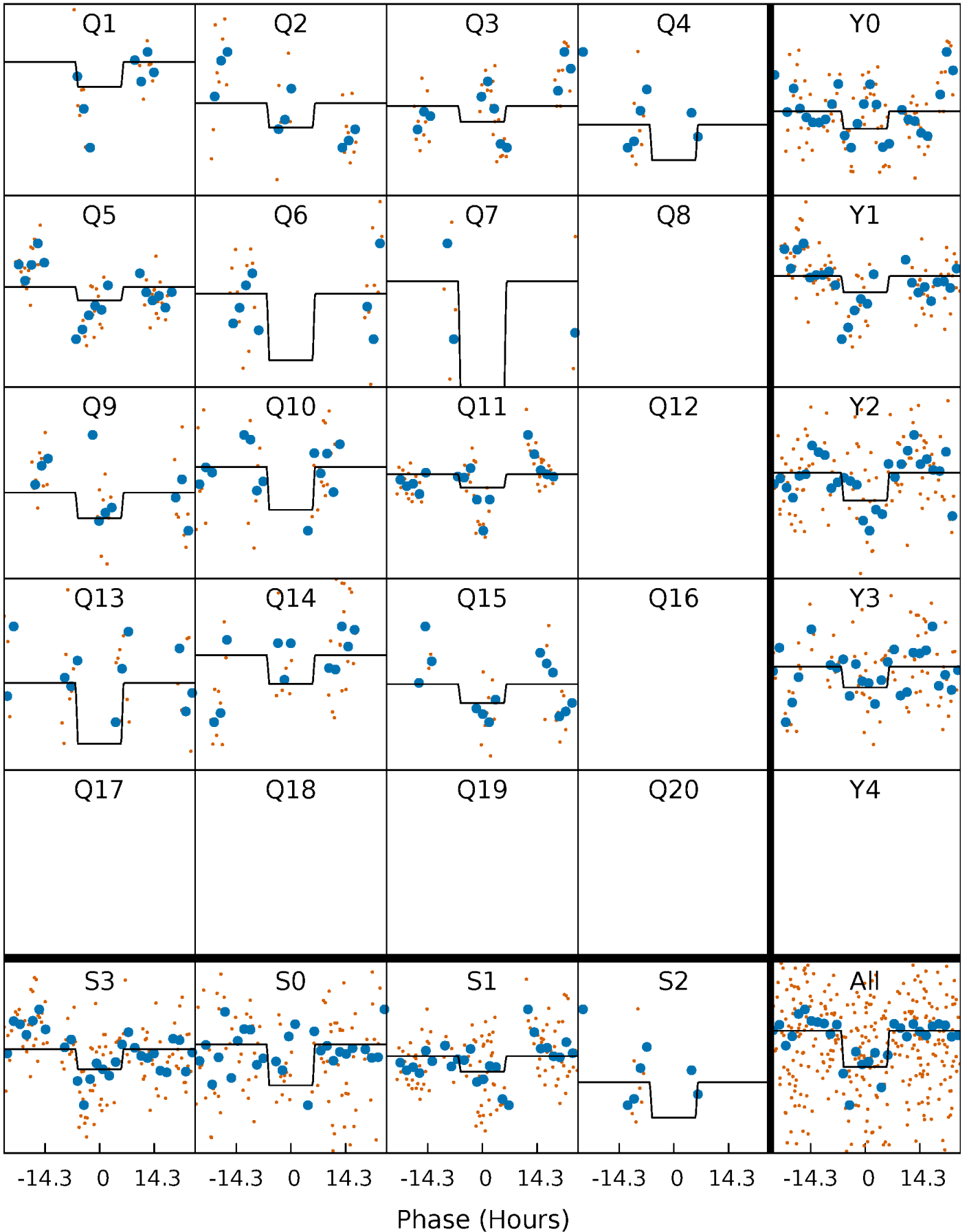
DV Quarter-Phased Transit Curves

TCE 011954651-08 P= 51.694463 Days $T_0=159.140572$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

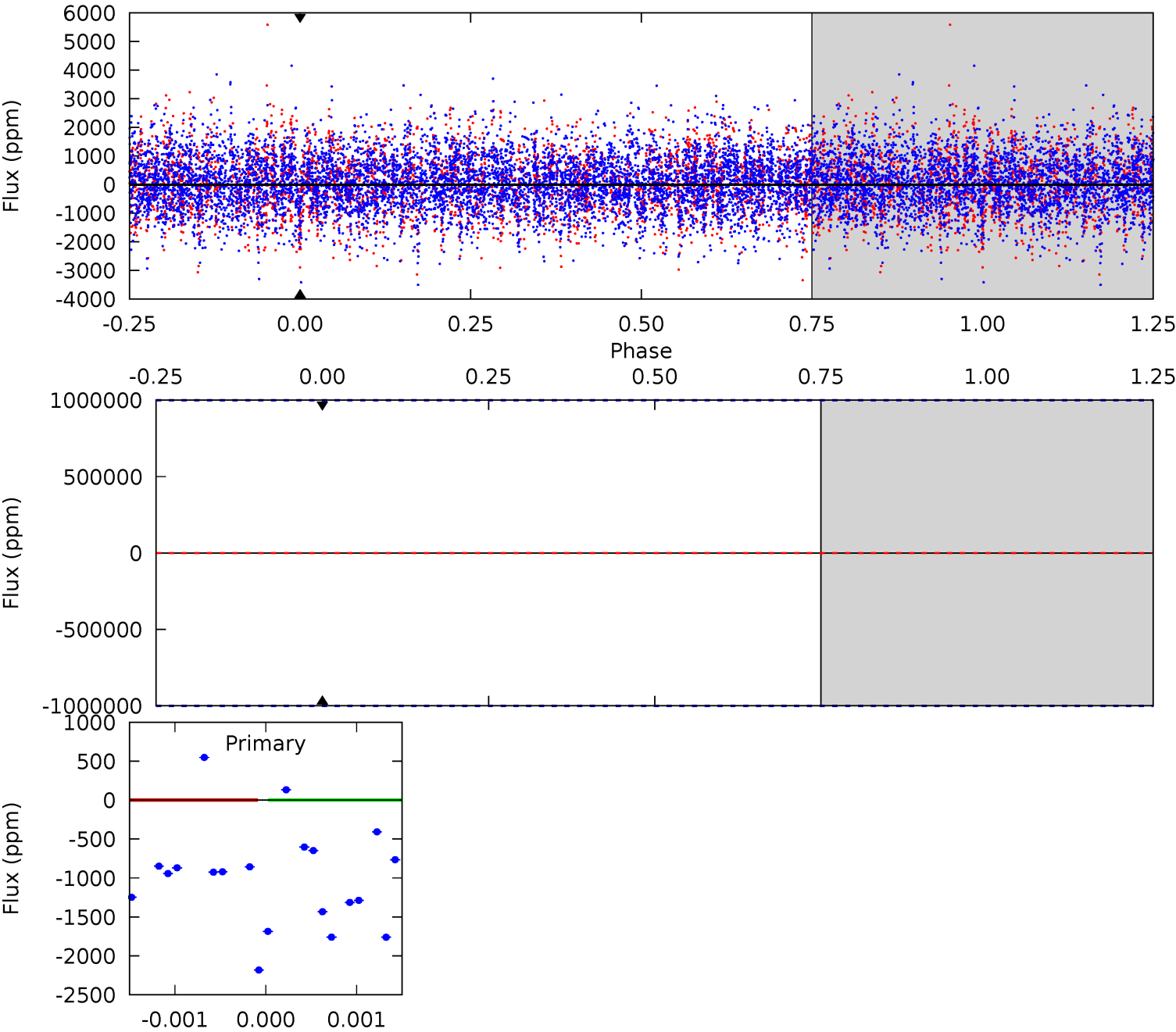
TCE 011954651-08 P= 51.694463 Days $T_0=159.191002$ (BKJD)



DV Model-Shift Uniqueness Test

011954651-08, P = 51.694463 Days, E = 107.446109 Days

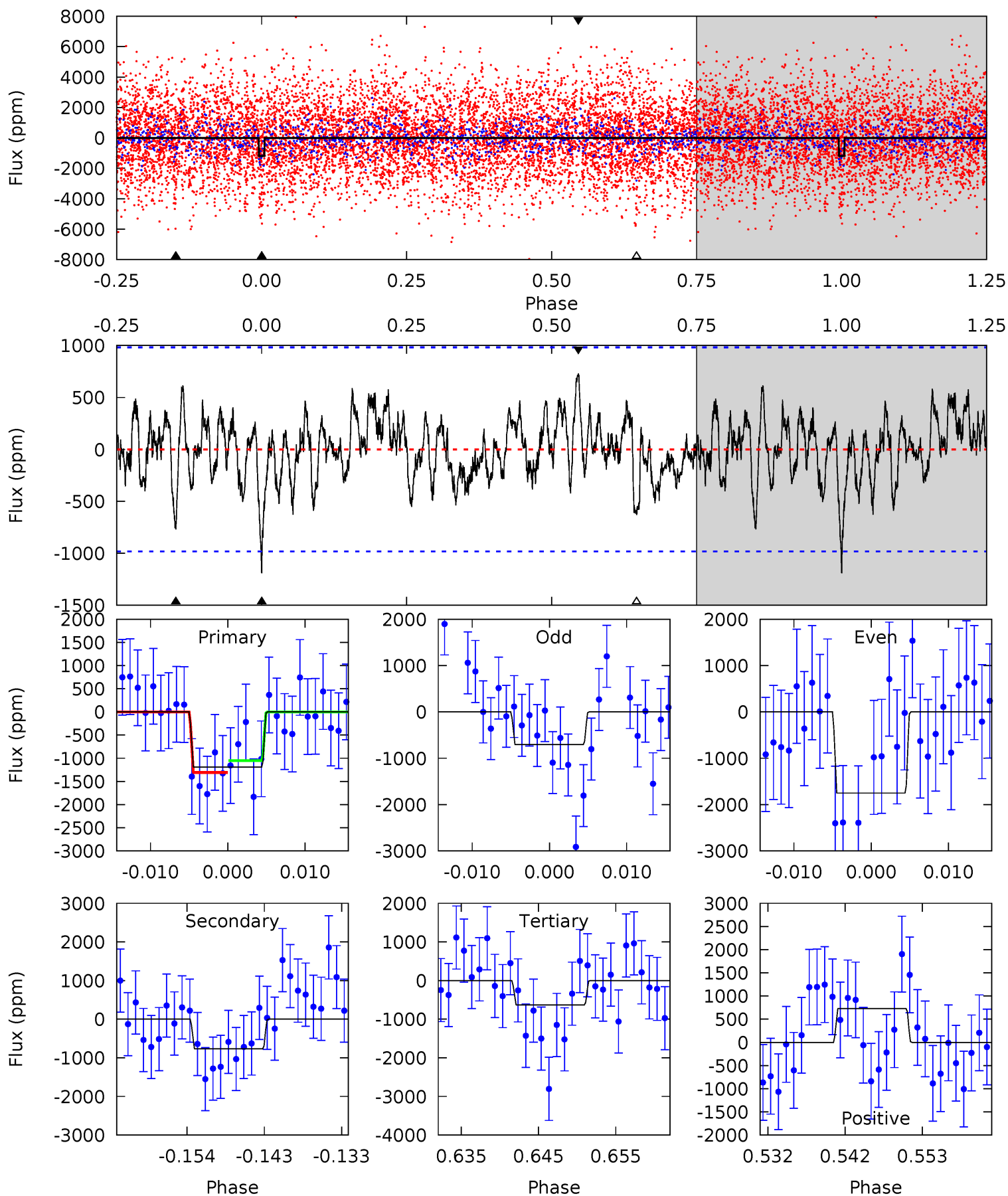
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011954651-08, P = 51.694463 Days, E = 107.496539 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.09	3.93	3.22	3.73	5.02	2.57	1.23	2.87	2.36	0.71	0.20	2.68	1.27	0.38	0.65



Stellar Parameters For KIC 011954651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6810^{+214}_{-285}	$4.033^{+0.299}_{-0.161}$	$-0.500^{+0.250}_{-0.300}$	$1.727^{+0.470}_{-0.574}$	$1.174^{+0.189}_{-0.170}$	$0.321^{+0.694}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+16%/-14%	+216%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011954651-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$12.90^{+13.54}_{-9.25}$	1013^{+80}_{-93}	5665^{+36000}_{-37933}	600^{+63304}_{-50093}
Alt.	-768 ± 196	$15.28^{+14.42}_{-10.29}$	1010^{+88}_{-91}	4159^{+2784}_{-857}	145^{+1258}_{-105}

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 $A_{\text{obs}} \gg 1.0$

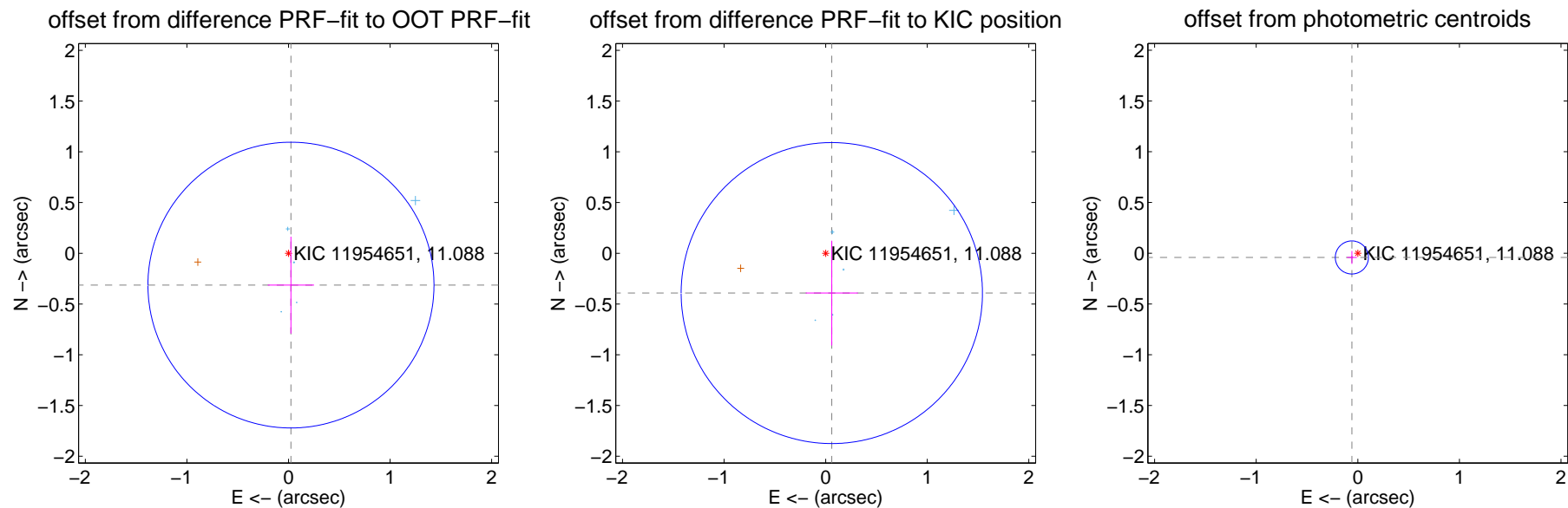
DV Centroid Data

Supplemental centroid analysis for 011954651-08. **Kepler magnitude: 11.09.** Transit SNR -1.00

There are 10 quarters with good PRF difference image offsets

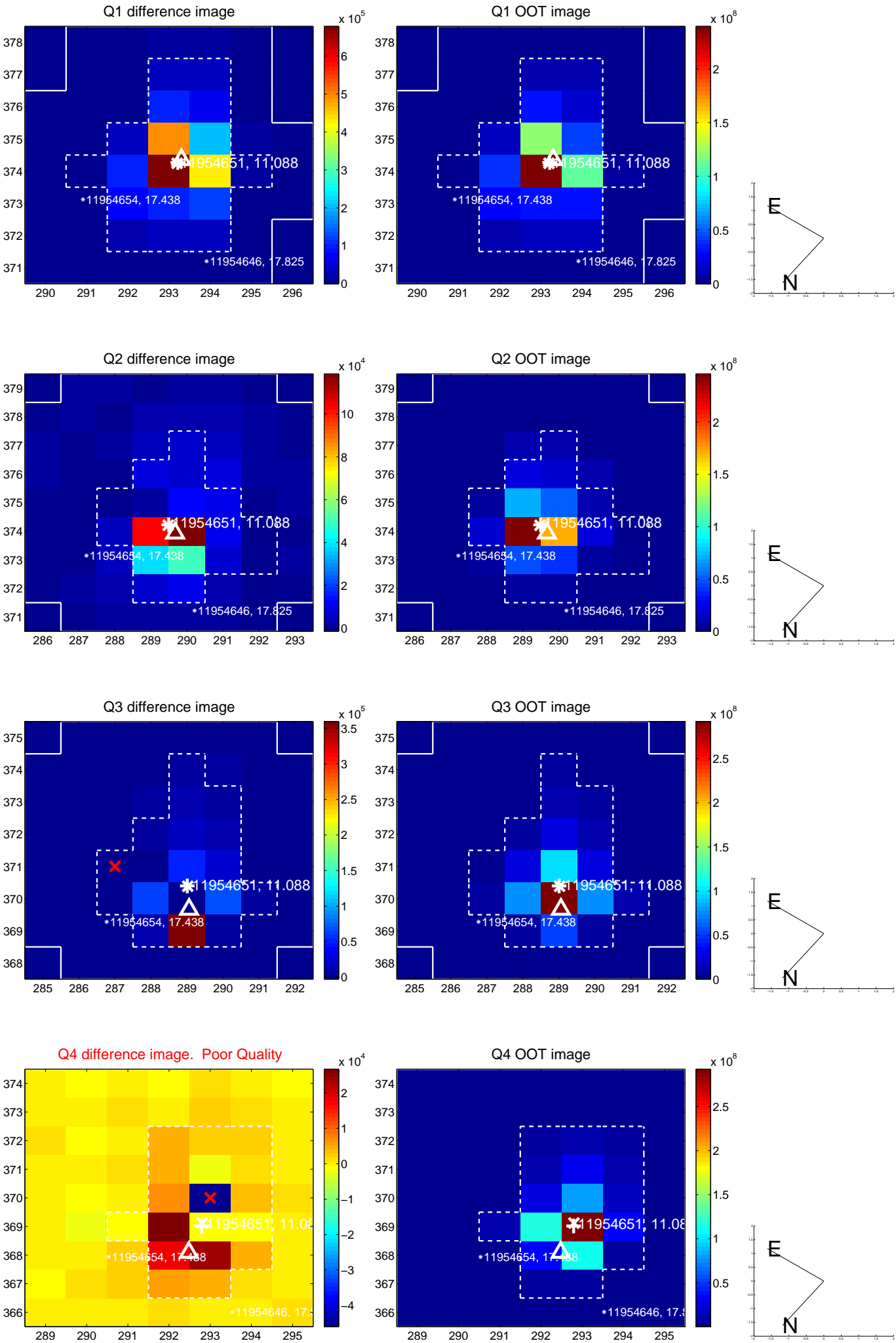
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.314 ± 0.469	0.67	-0.024 ± 0.228	-0.313 ± 0.477
PRF-fit source offset from KIC position	0.397 ± 0.494	0.80	-0.060 ± 0.257	-0.392 ± 0.516
photometric centroid source offset	0.07 ± 0.05	1.32	0.06 ± 0.05	-0.04 ± 0.06

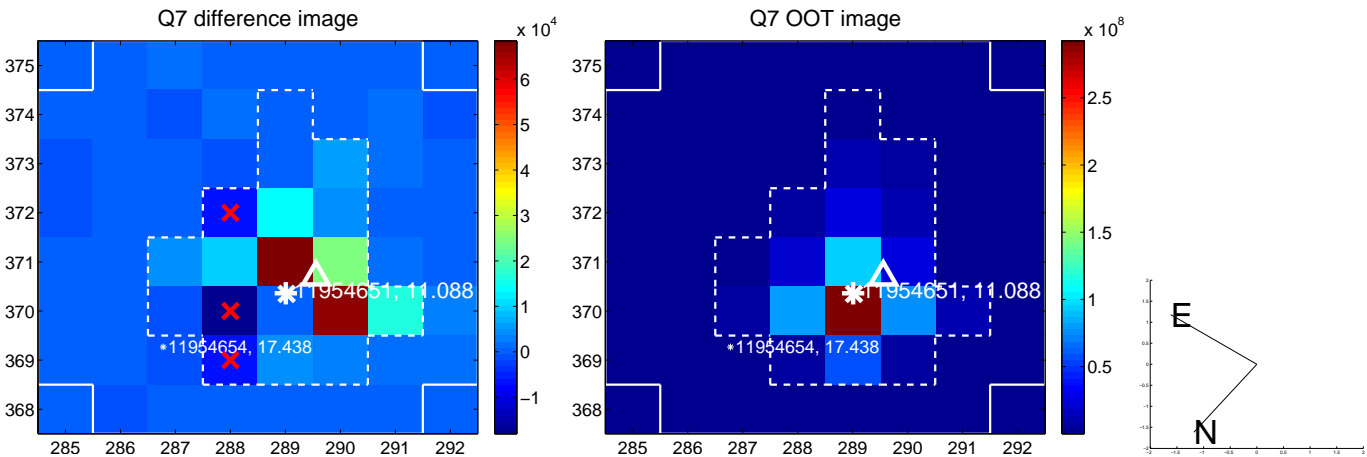
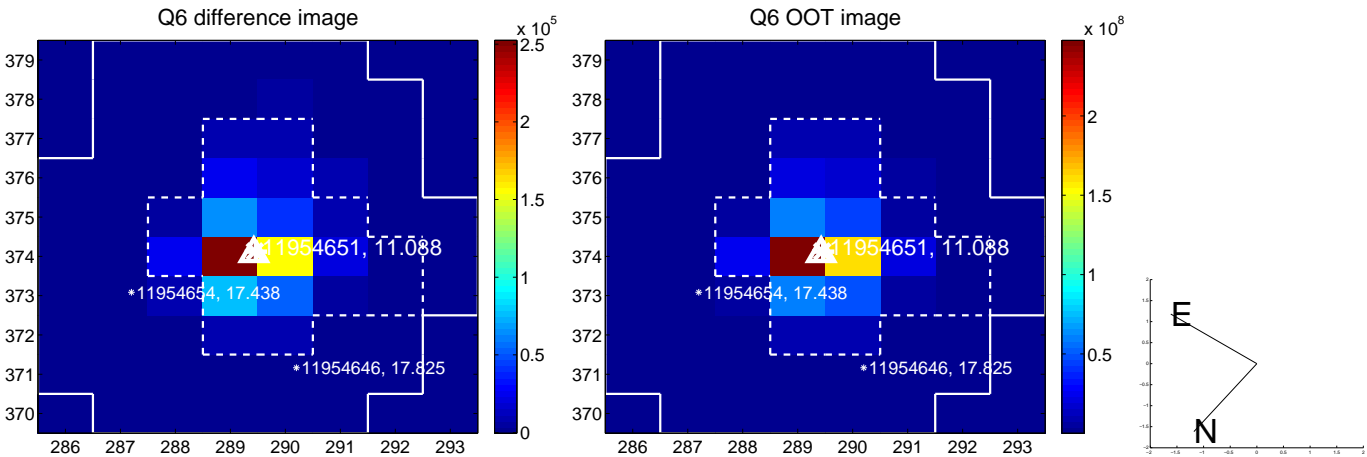
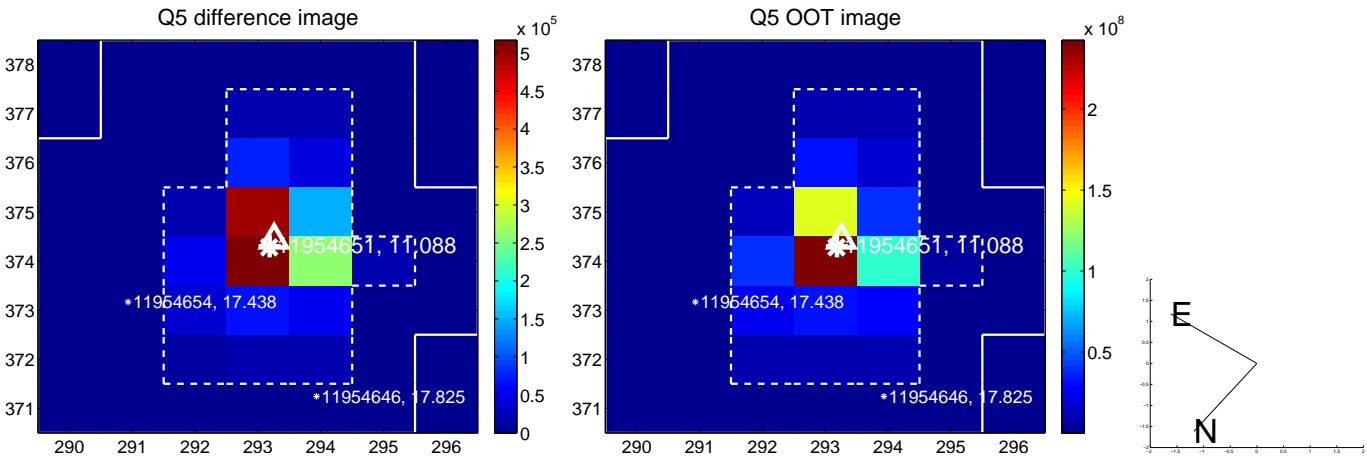


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

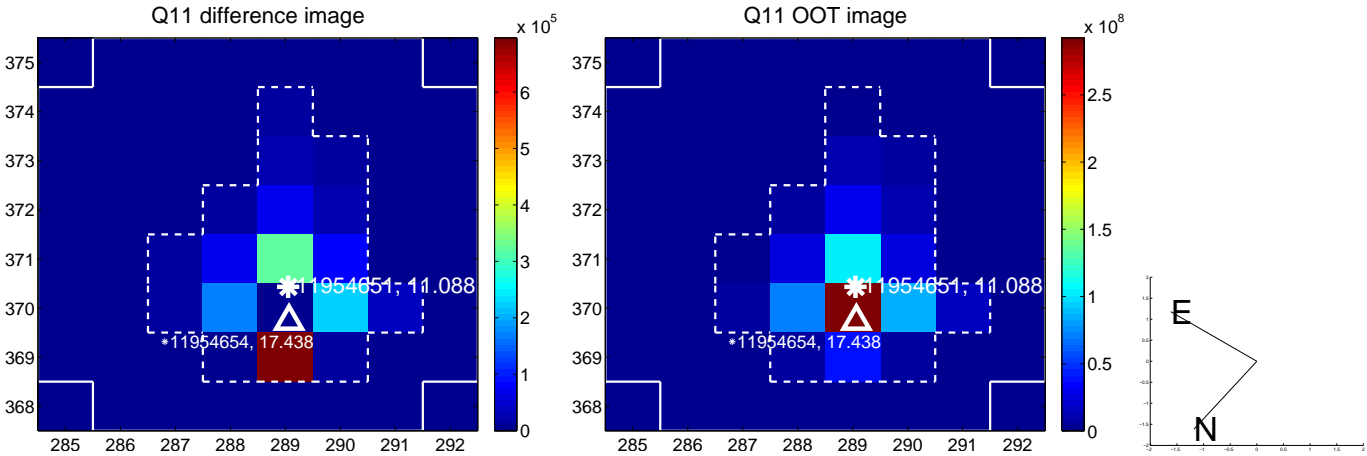
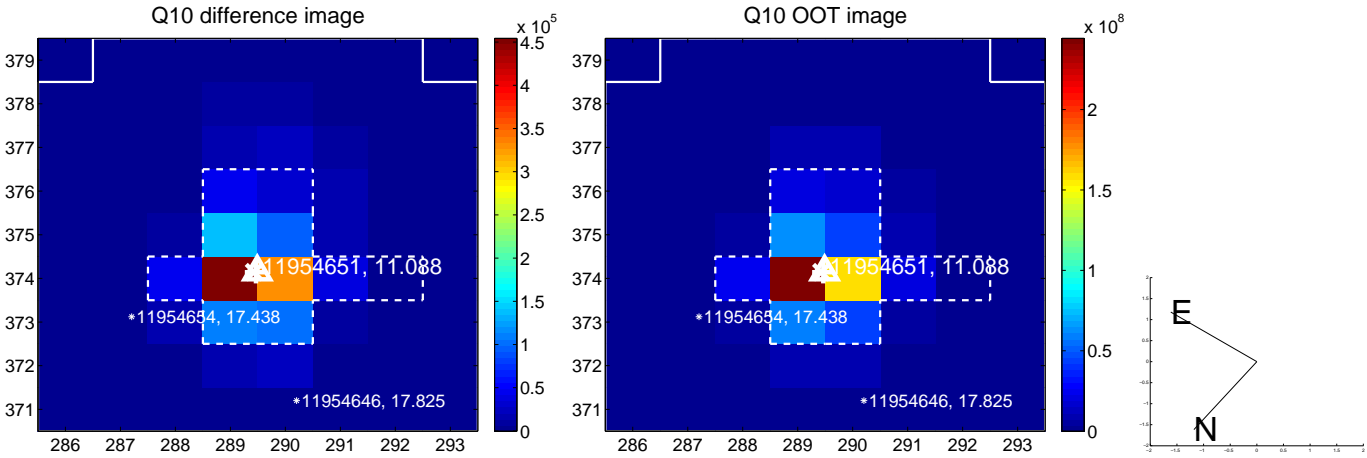
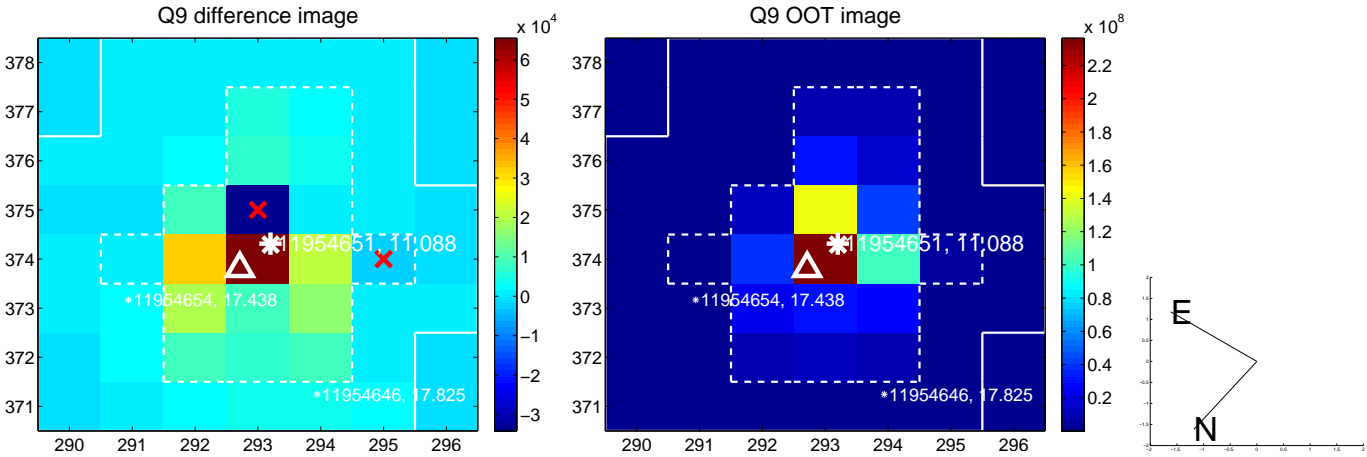
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

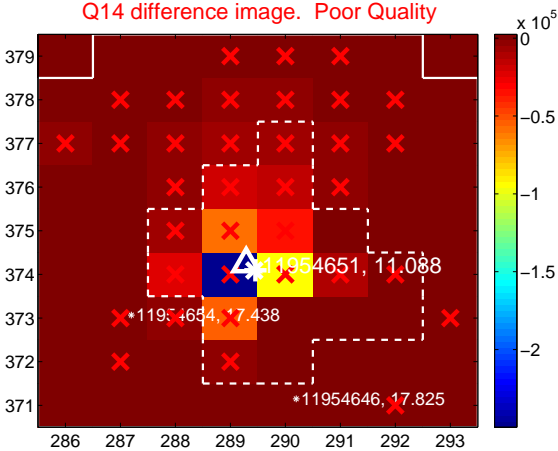
Q13 no difference image



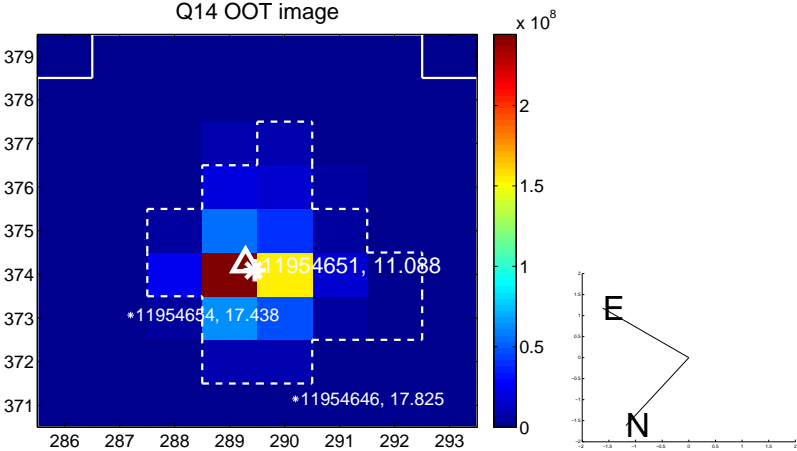
Q13 no OOT image



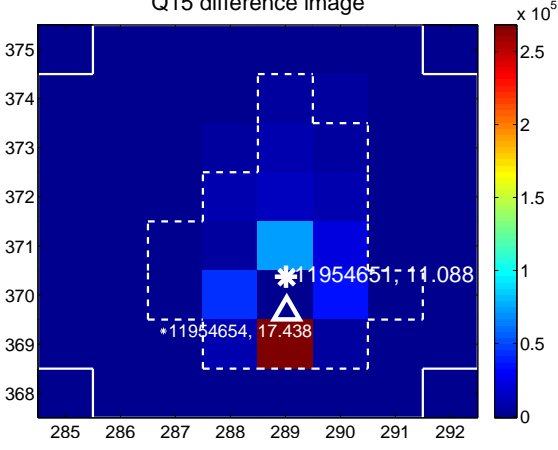
Q14 difference image. Poor Quality



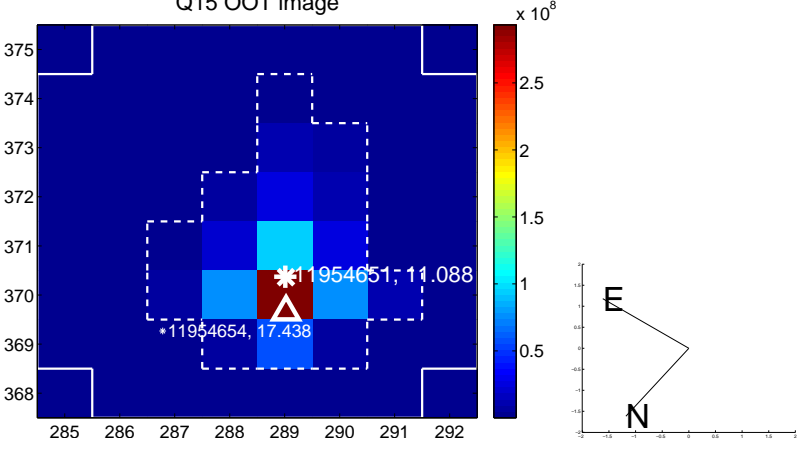
Q14 OOT image



Q15 difference image



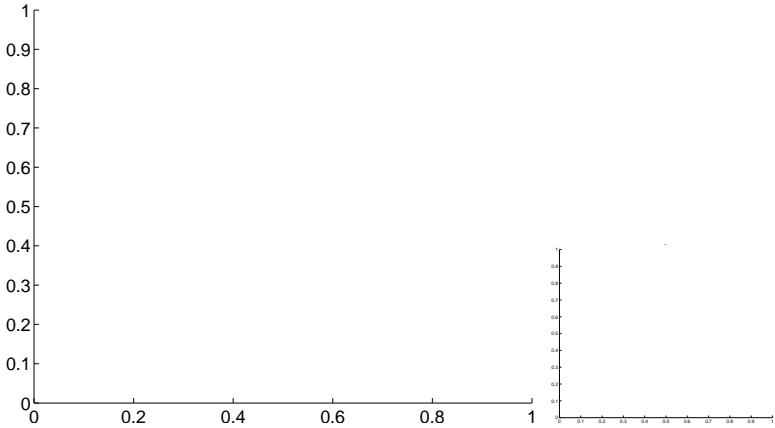
Q15 OOT image



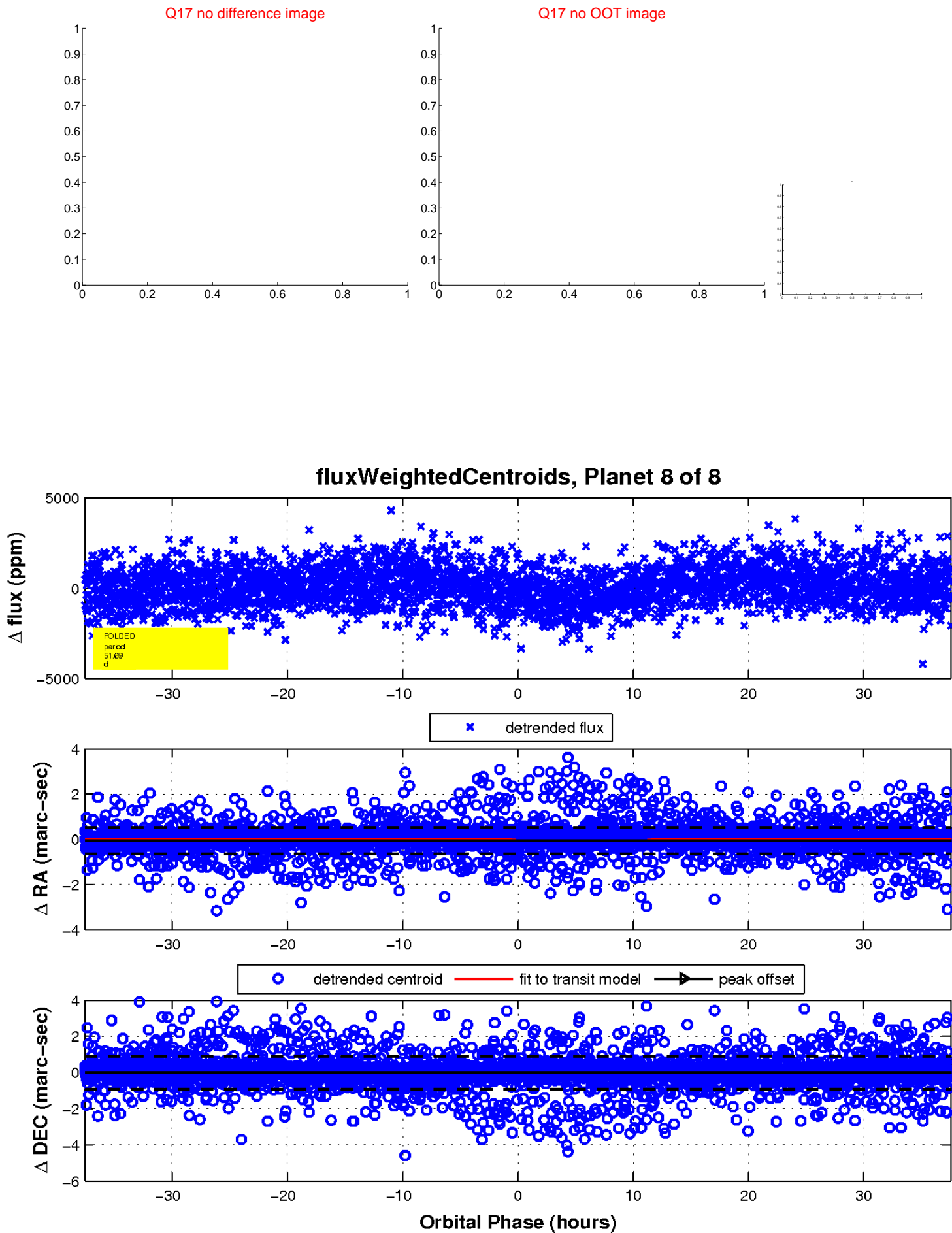
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

