

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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

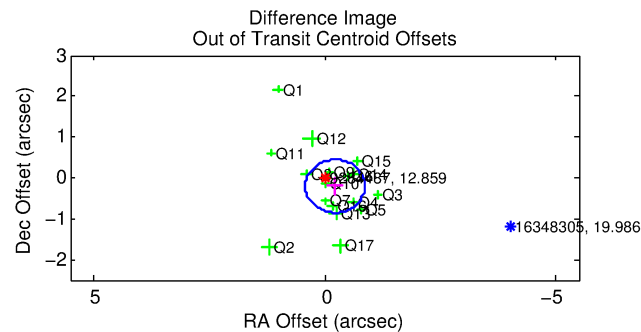
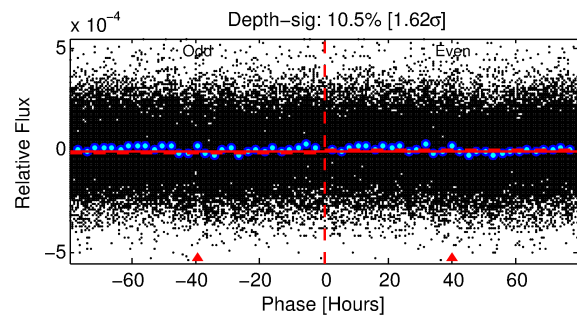
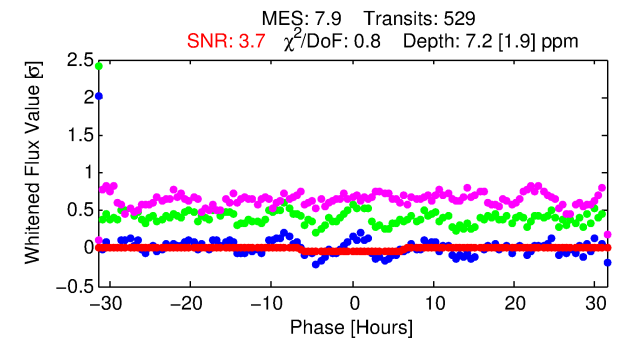
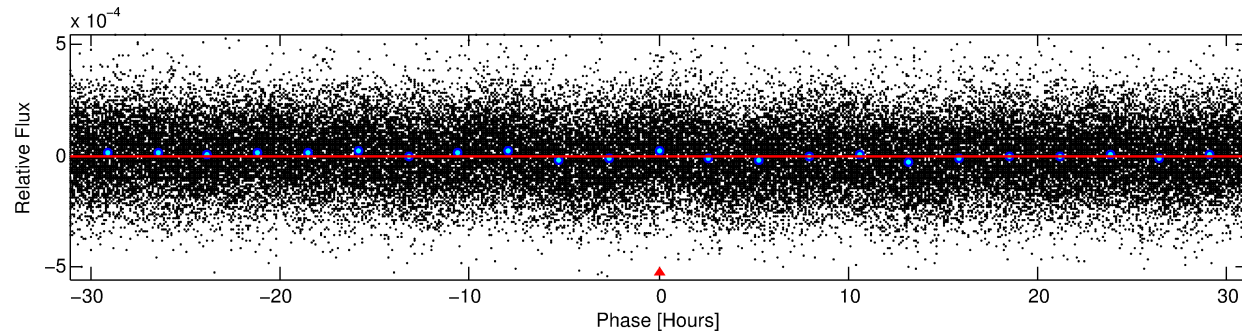
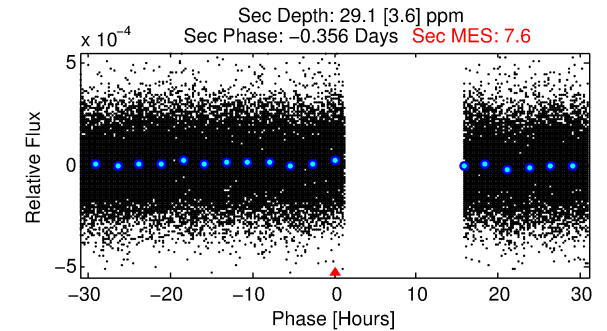
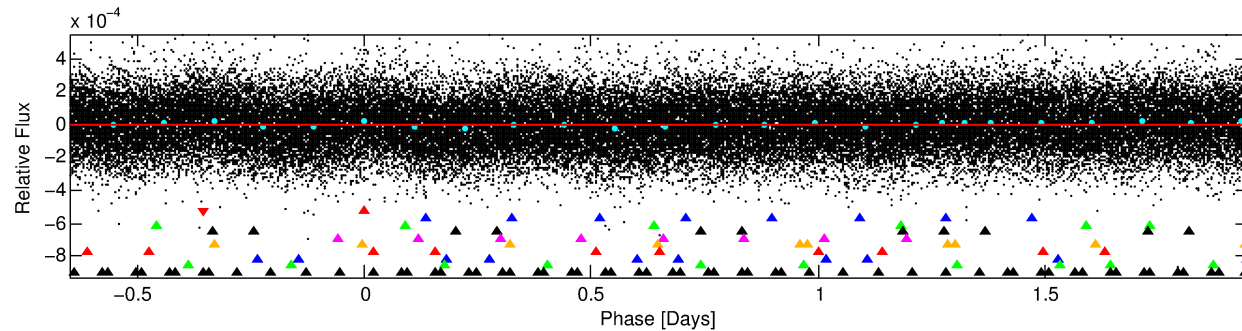
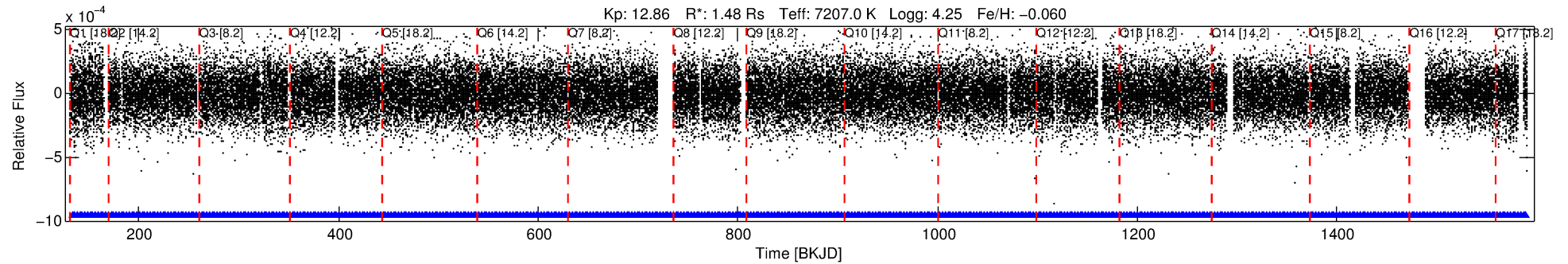
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-01

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 1 of 10 Period: 2.595 d



DV Fit Results:

Period = 2.59527 [0.00010] d
Epoch = 133.4801 [0.0205] BKJD
Rp/R* = 0.0028 [0.0013]
a/R* = 1.17 [0.96]
b = 0.88 [0.77]
Seff = 3046.79 [1271.71]
Teq = 1894 [198] K
Rp = 0.45 [0.27] Re
a = 0.0417 [0.0116] AU
Ag = 136.04 [141.27] [0.96σ]
Teffp = 10003 [2439] K [3.31σ]

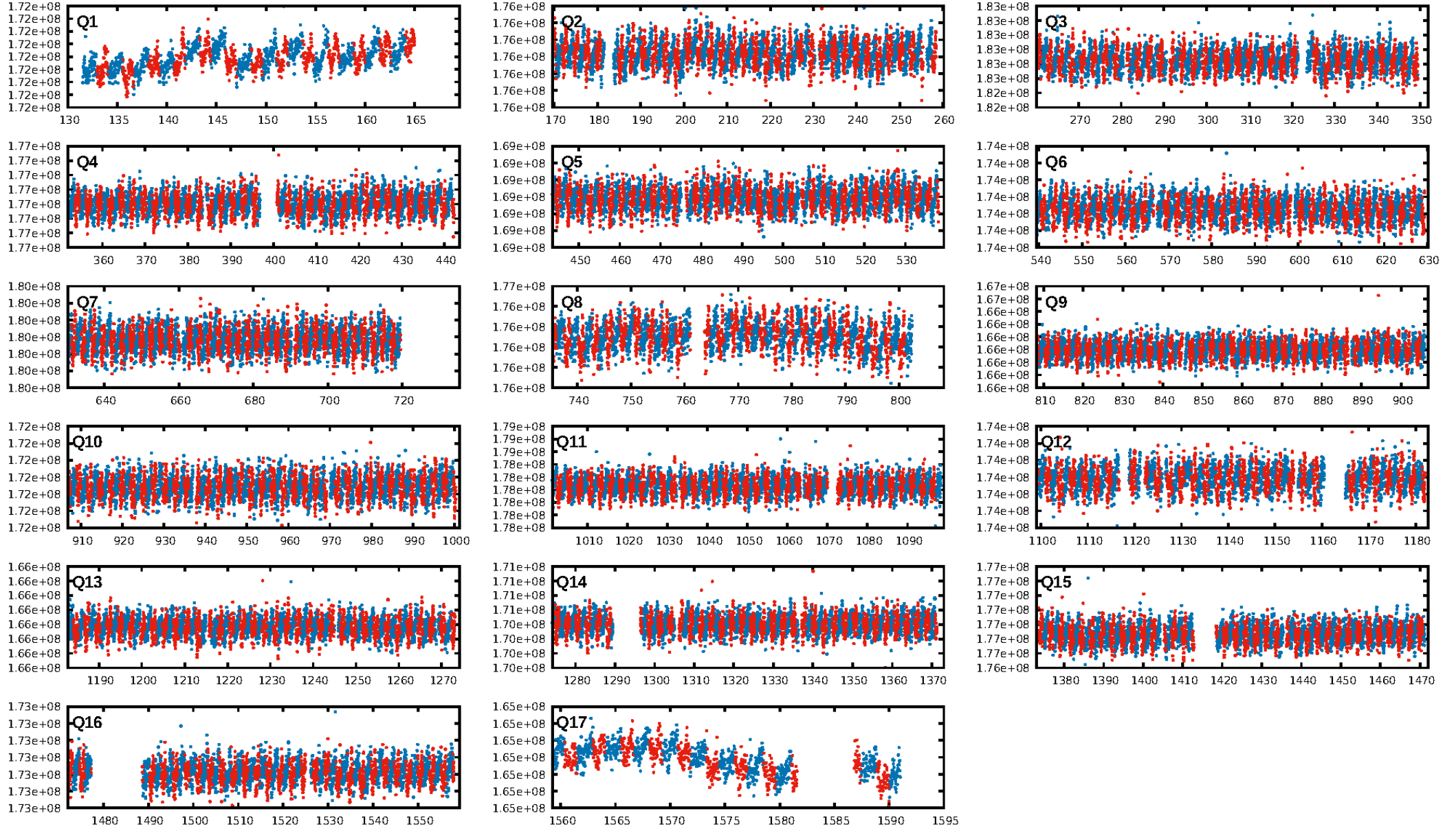
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [38.88σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.59e-09
RollingBand-fgt: 1.00 [505/505]
GhostDiagnostic-chr: 3.835
Centroid-sig: 45.5%
Centroid-so: 1.773 arcsec [0.85σ]
OotOffset-rm: 0.302 arcsec [1.40σ]
KicOffset-rm: 0.257 arcsec [1.17σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

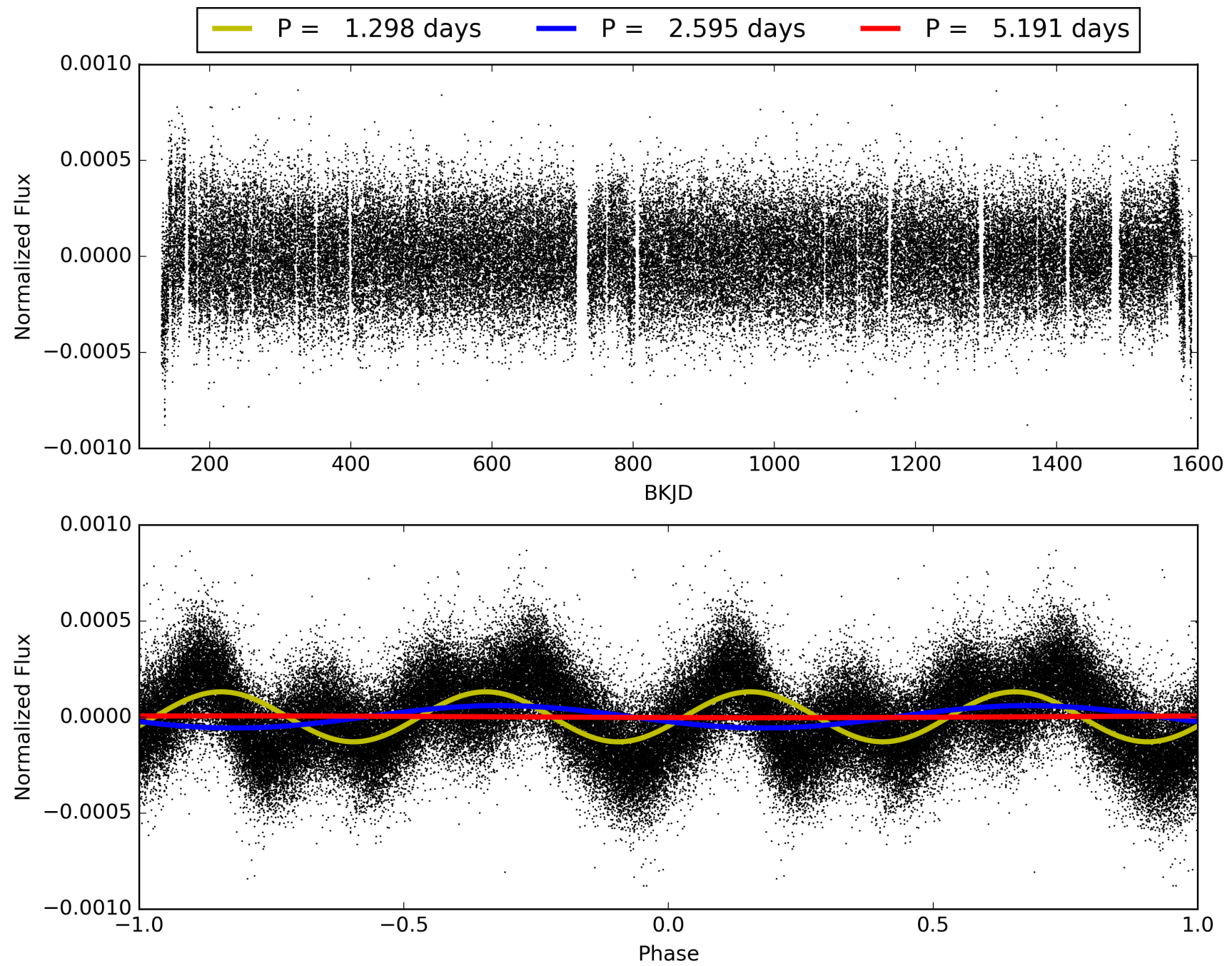
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:39:40 Z

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

TCE 009284487-01, PDC Light Curves

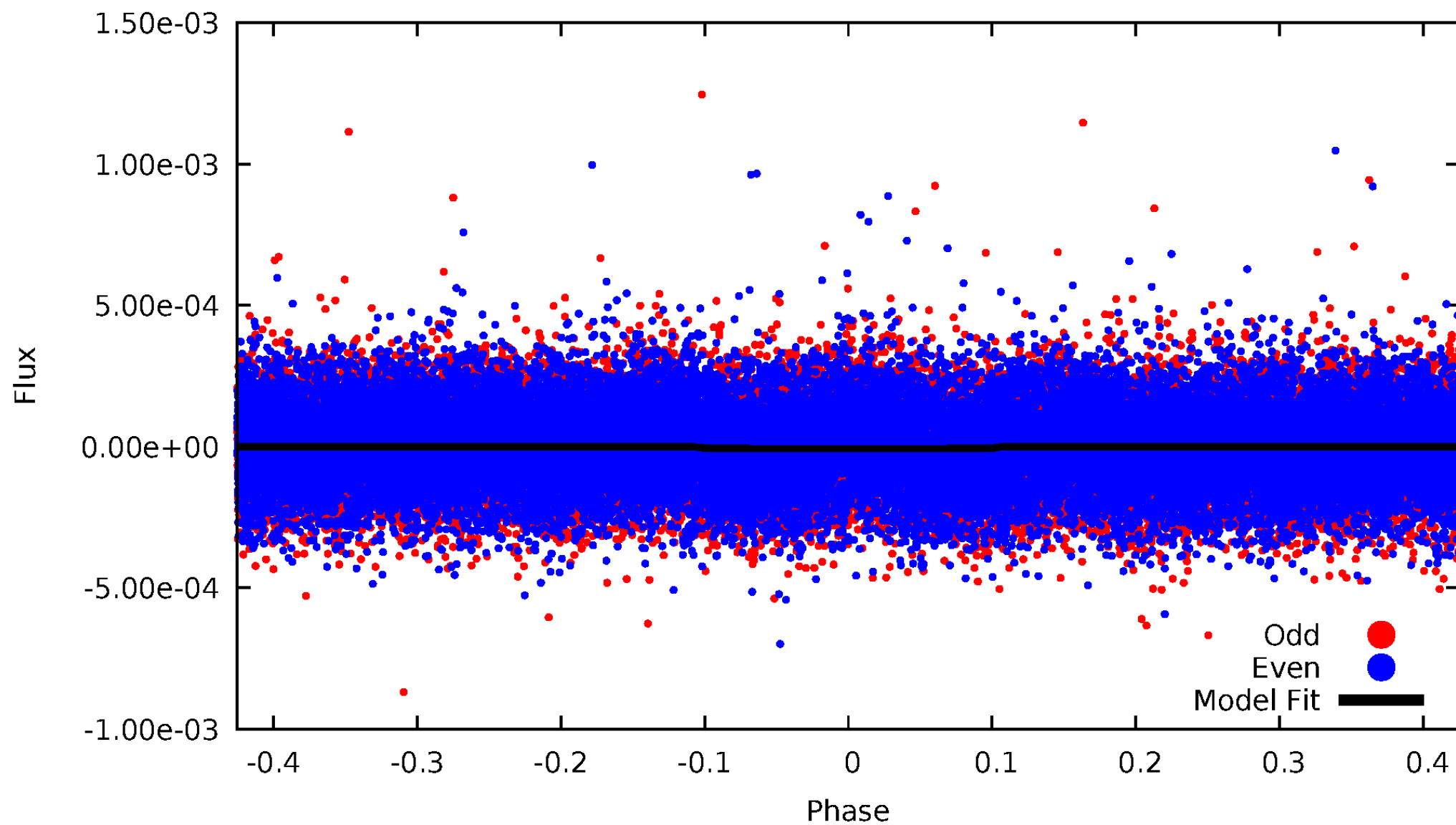


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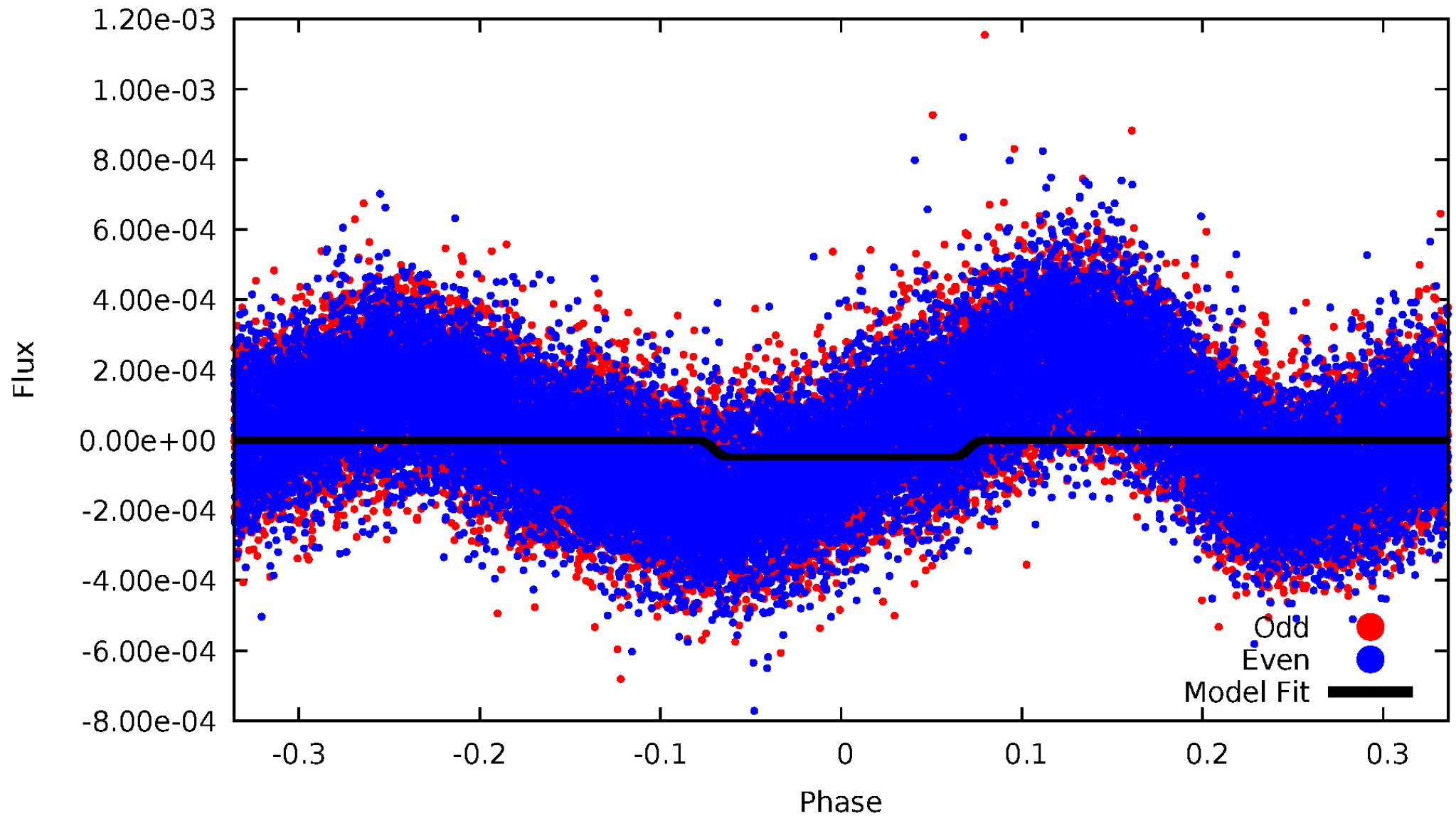
DV Odd/Even

TCE 009284487-01

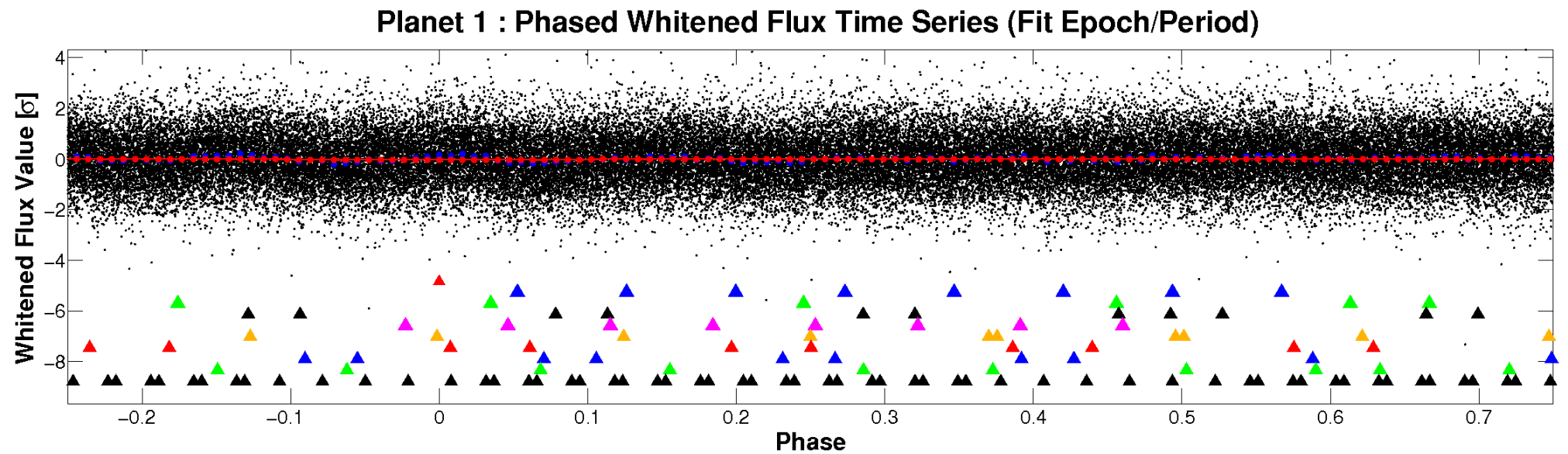
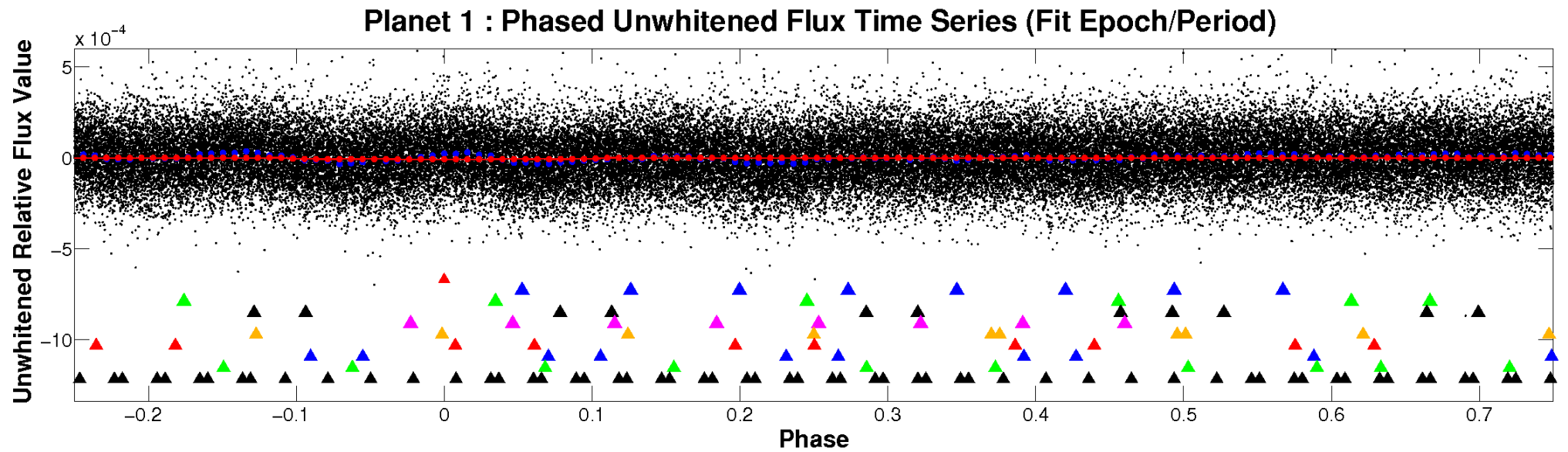


ALT Odd/Even

TCE 009284487-01

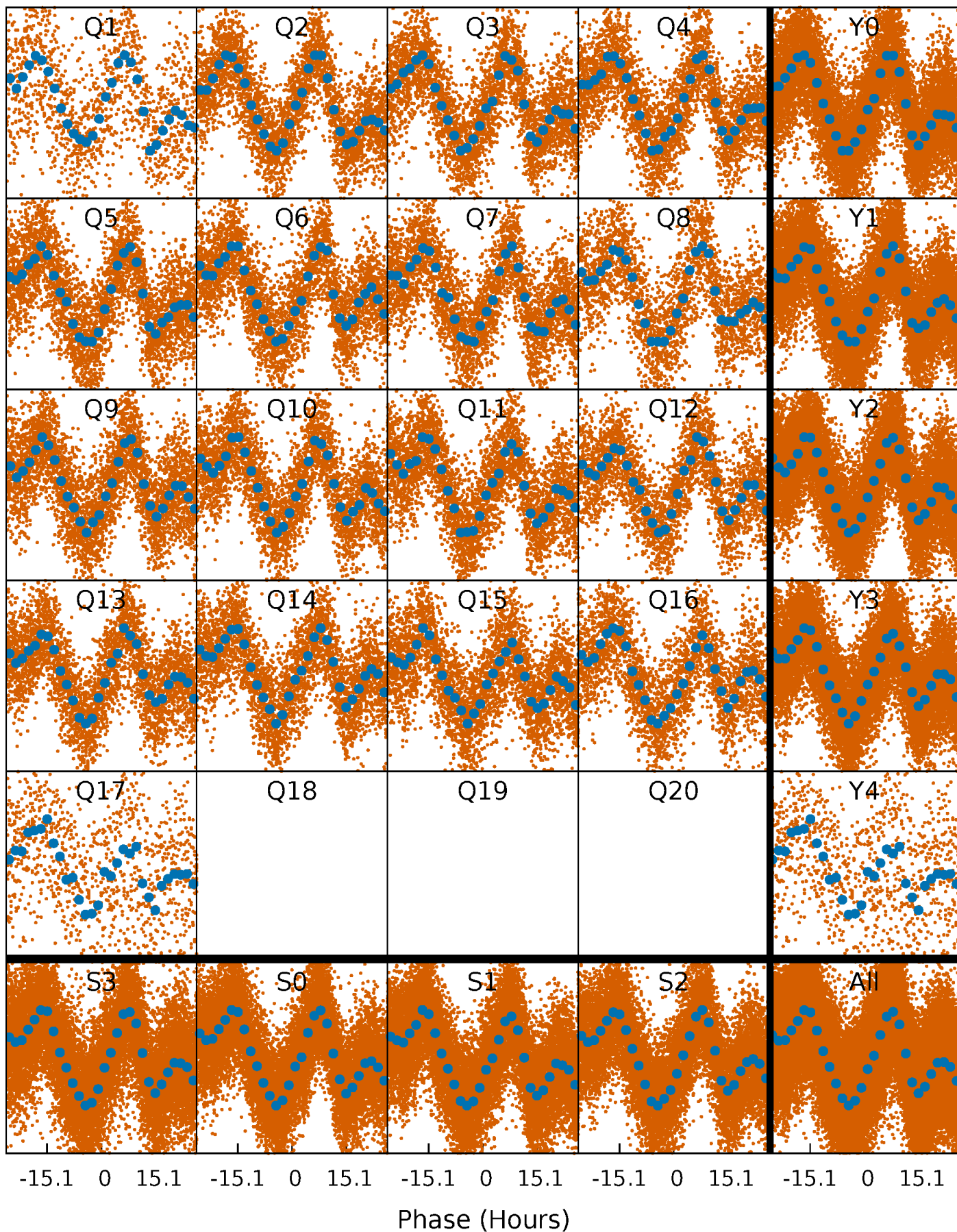


Non-Whitened Vs. Whitened Light Curve



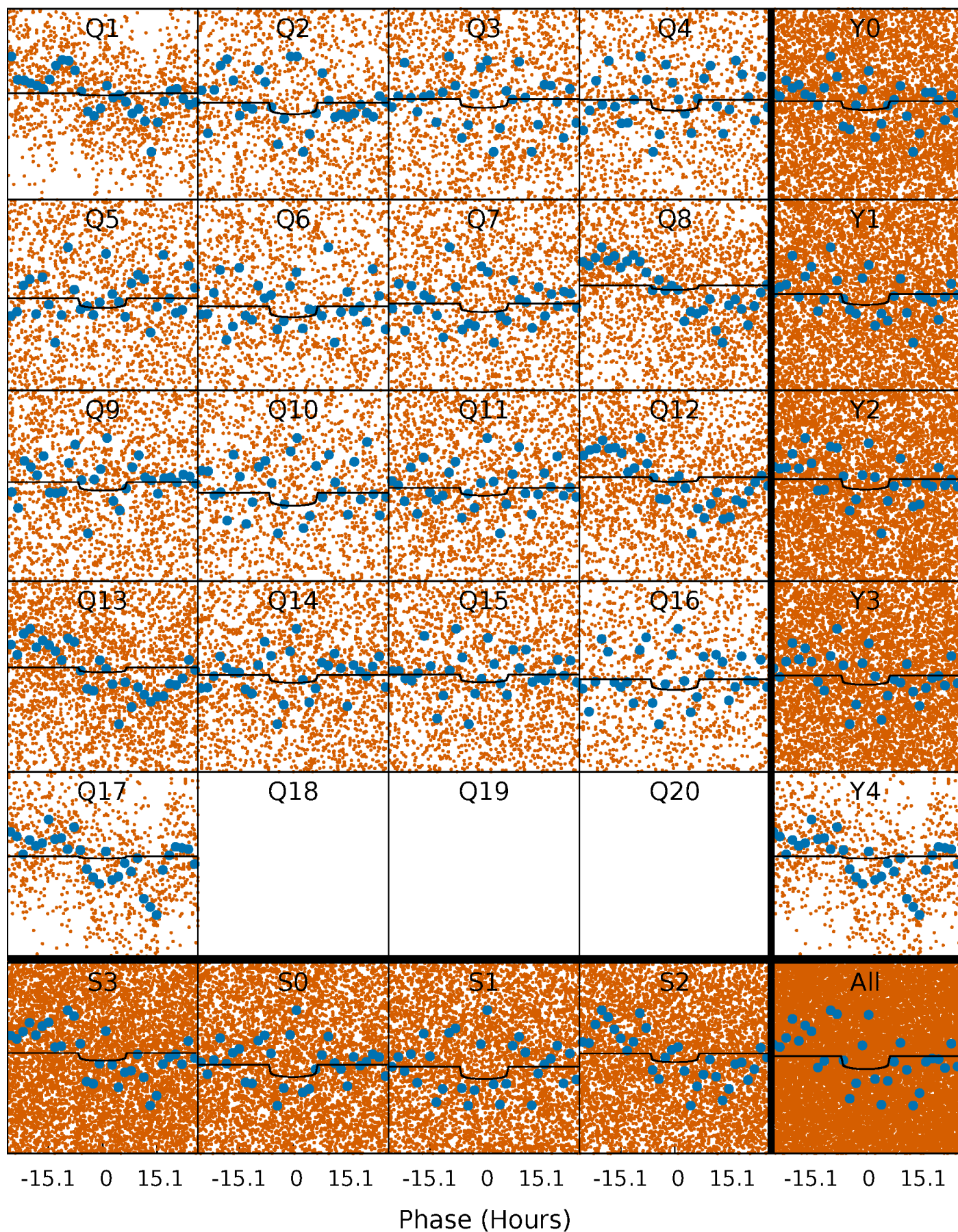
PDC Quarter-Phased Transit Curves

TCE 009284487-01 P= 2.595275 Days $T_0=133.480054$ (BKJD)



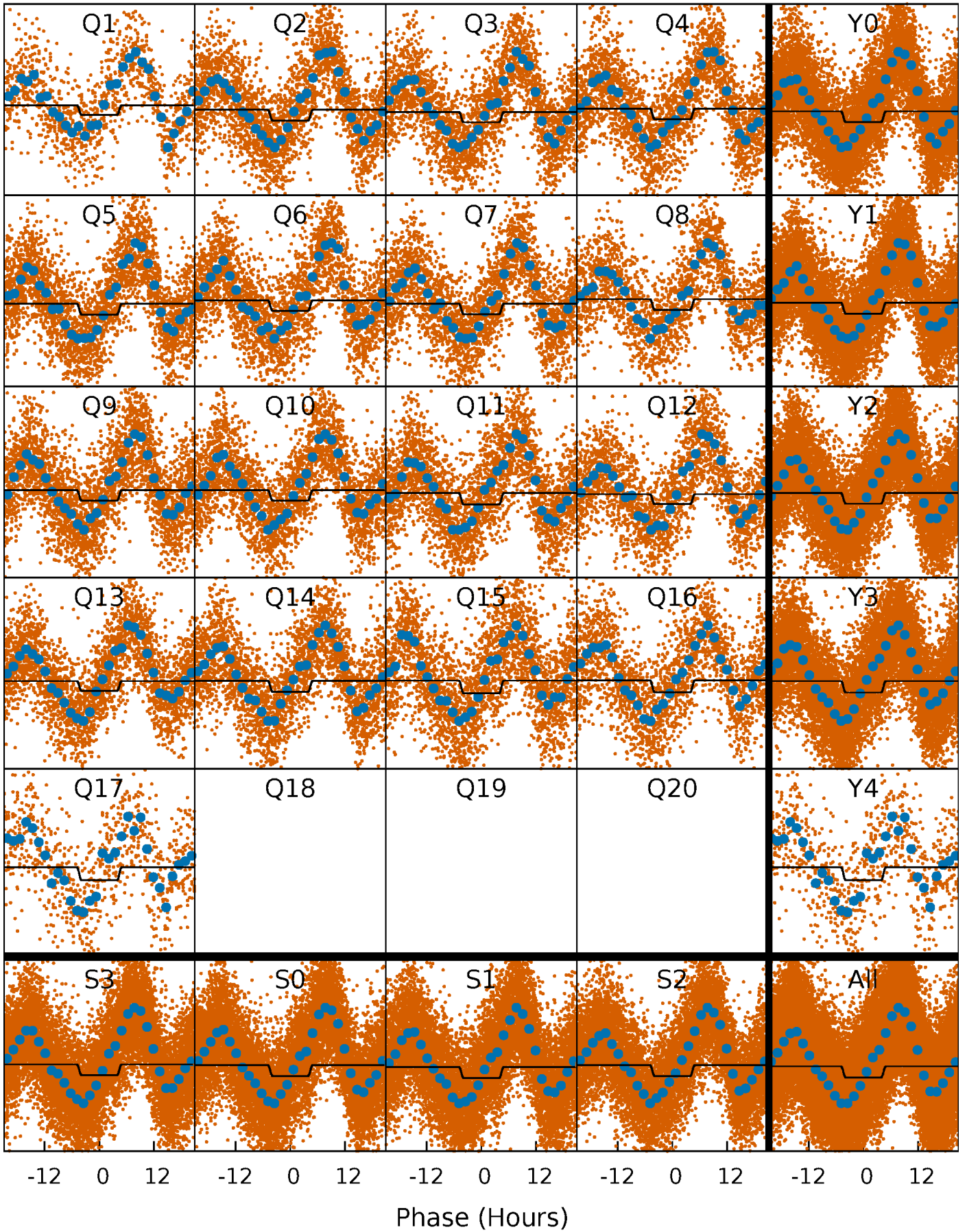
DV Quarter-Phased Transit Curves

TCE 009284487-01 P= 2.595275 Days $T_0=133.480054$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

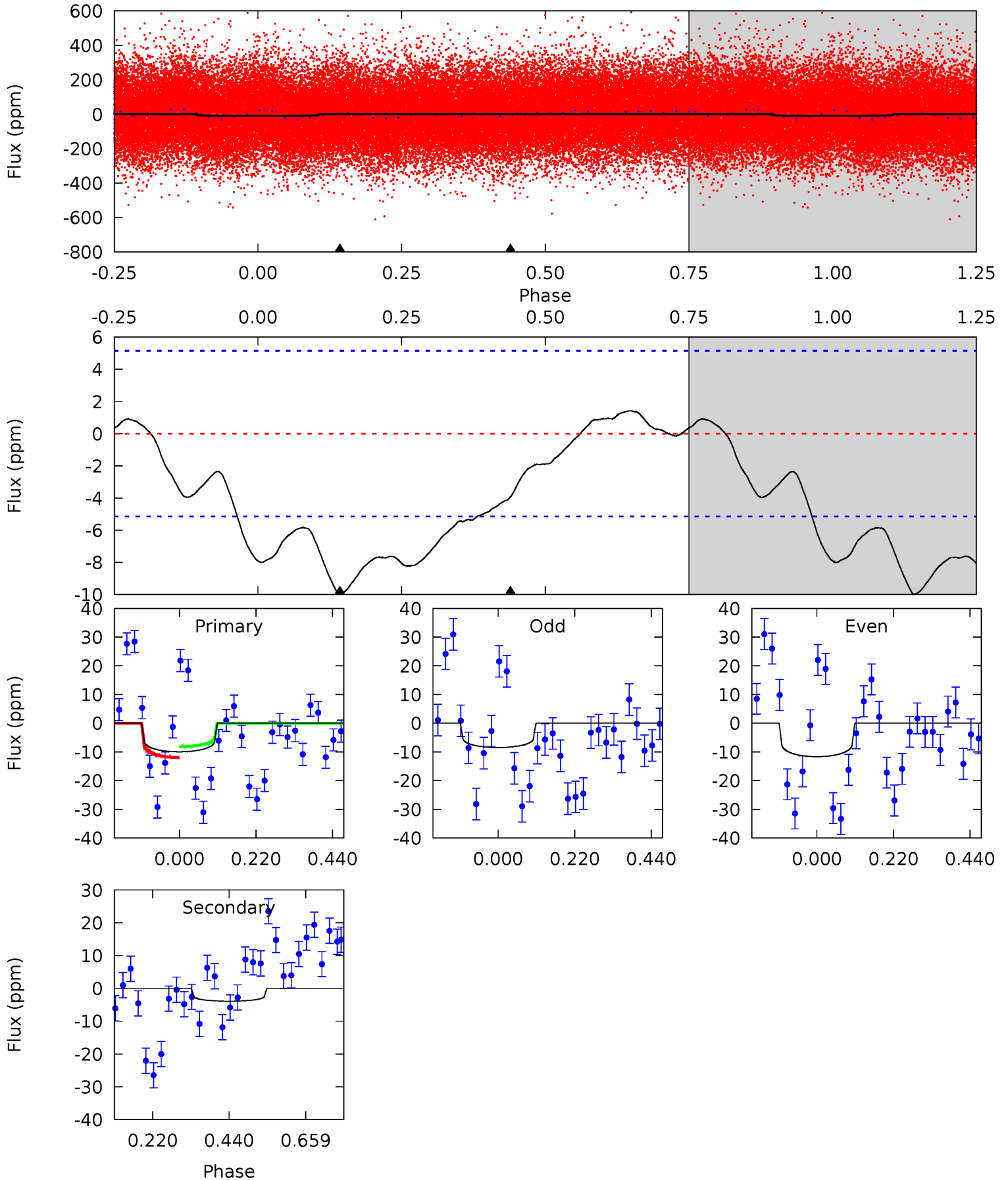
TCE 009284487-01 P= 2.595386 Days $T_0=133.429365$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-01, P = 2.595275 Days, E = 130.884779 Days

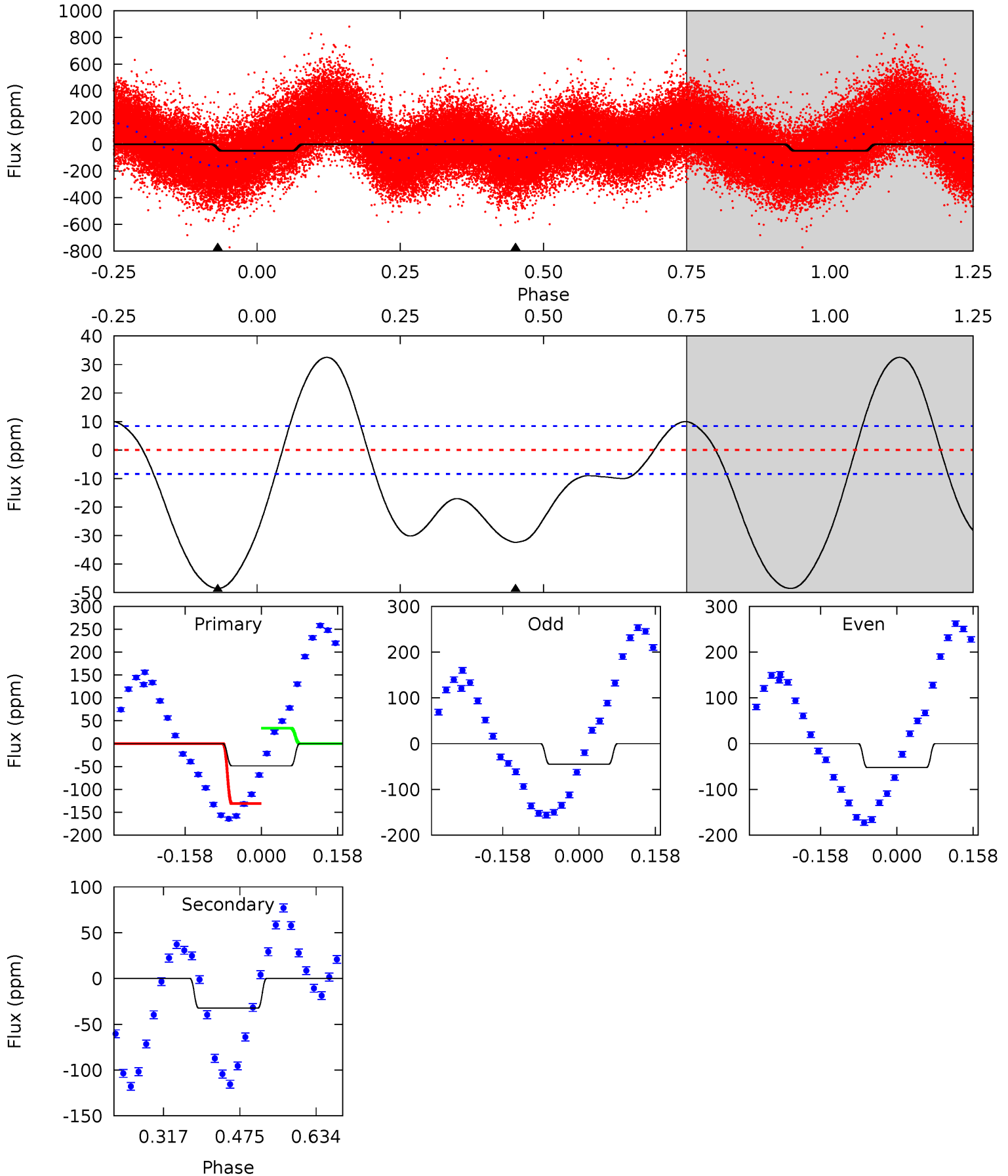
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.53	3.35	0	0	4.40	1.23	1.48	8.53	8.53	3.35	3.35	1.37	1.25	0.12	1.65



Alt Model-Shift Uniqueness Test

009284487-01, P = 2.595386 Days, E = 130.833979 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.9	17.2	0	0	4.47	1.41	10.2	25.9	25.9	17.2	17.2	1.89	1.00	0.40	31.0



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 1	$0.46^{+0.26}_{-0.21}$	2686^{+212}_{-152}	5952^{+2306}_{-1141}	16^{+39}_{-10}
Alt.	-32 ± 2	$1.16^{+0.30}_{-0.25}$	2692^{+210}_{-165}	6441^{+795}_{-620}	22^{+14}_{-8}

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

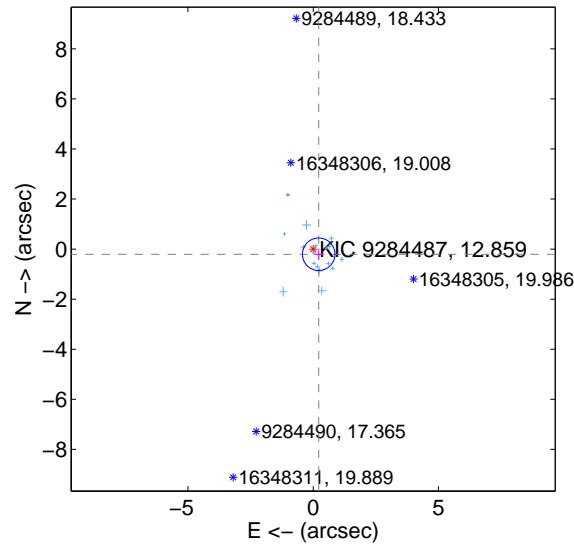
Supplemental centroid analysis for 009284487-01. Kepler magnitude: 12.86. Transit SNR 3.71

There are 16 quarters with good PRF difference image offsets

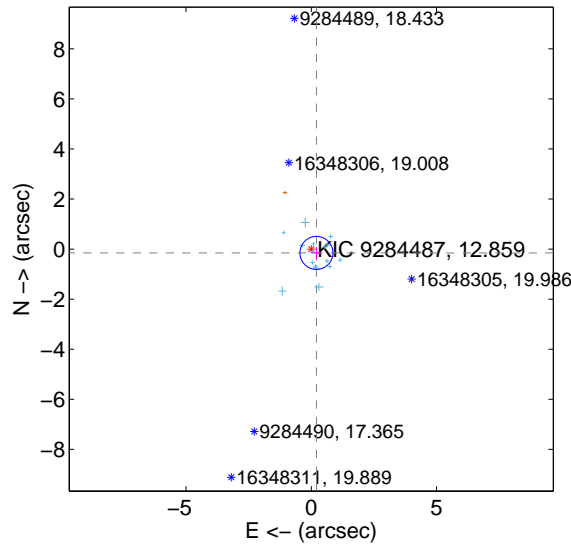
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.302 ± 0.216	1.40	-0.221 ± 0.176	-0.206 ± 0.225
PRF-fit source offset from KIC position	0.257 ± 0.220	1.17	-0.207 ± 0.177	-0.152 ± 0.231
photometric centroid source offset	1.77 ± 2.09	0.85	1.60 ± 2.09	0.76 ± 2.11

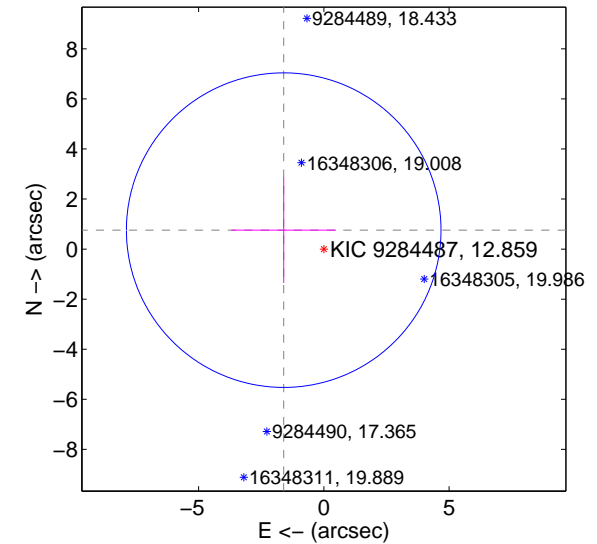
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

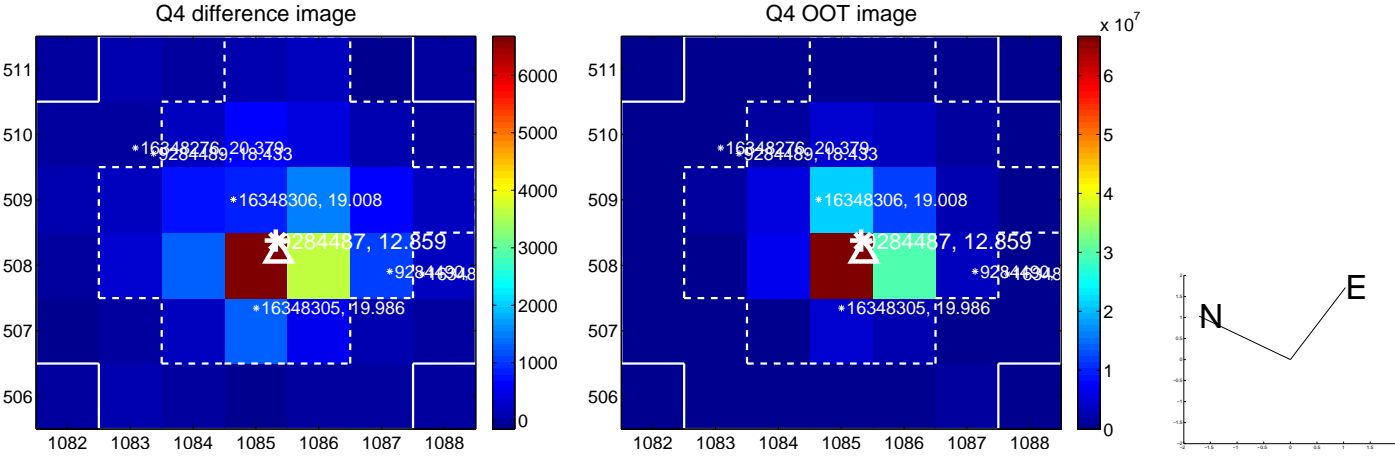
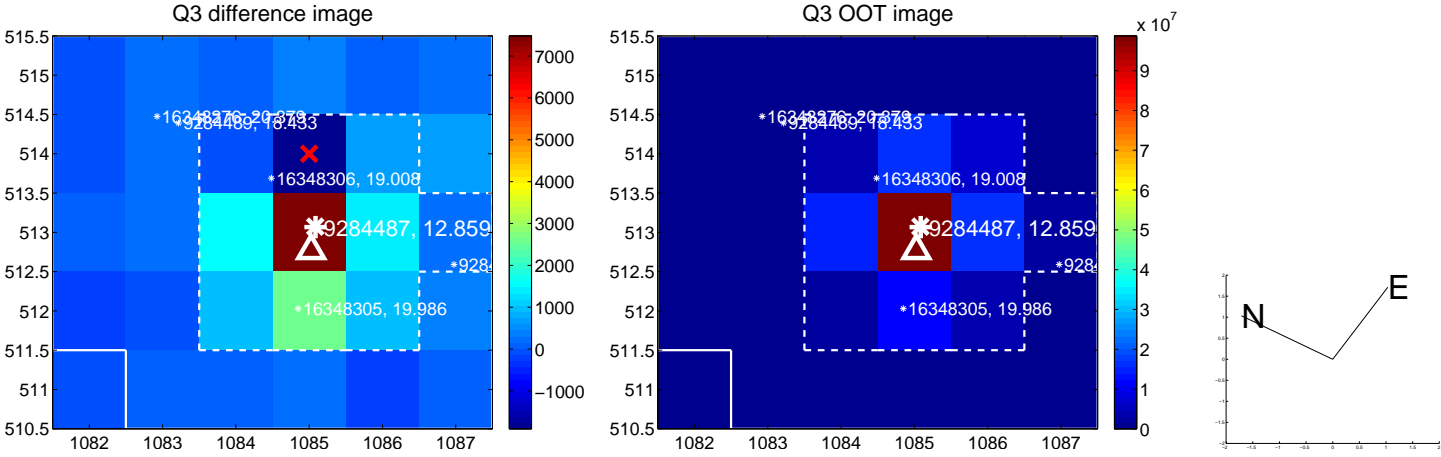
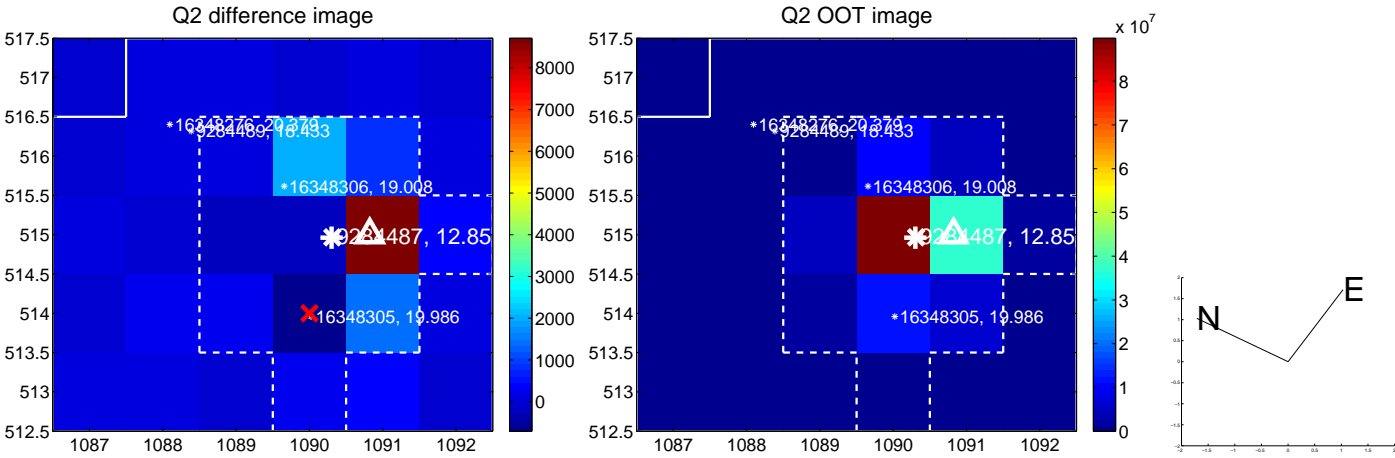
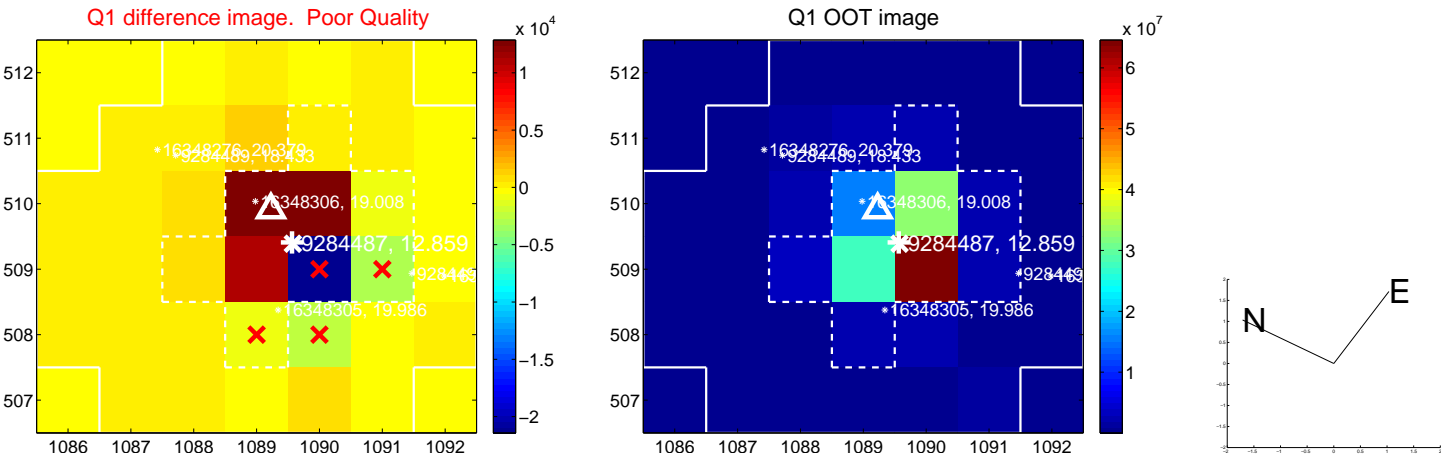


offset from photometric centroids

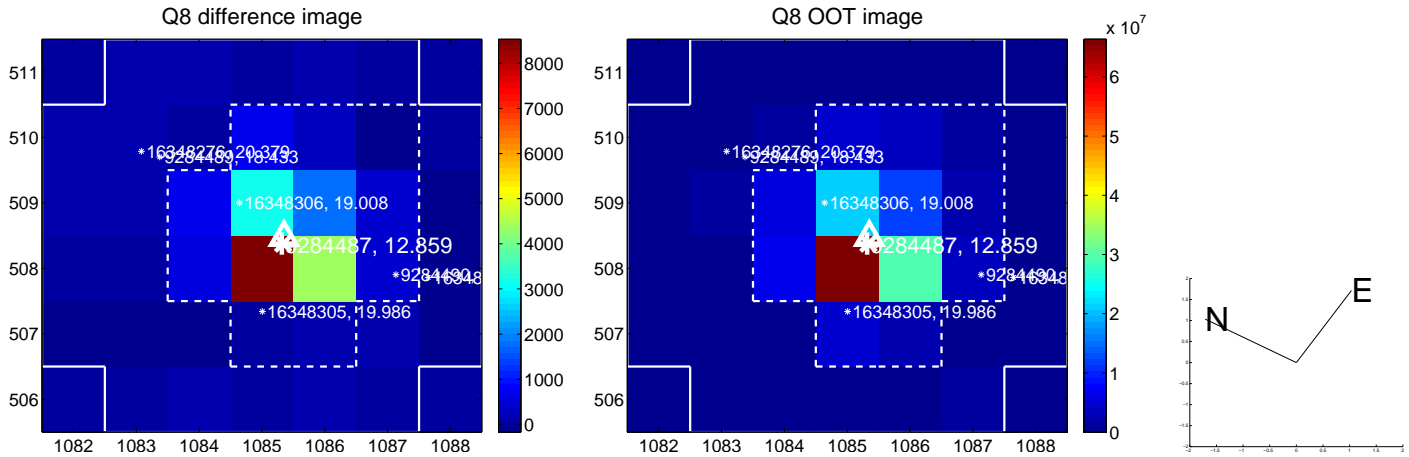
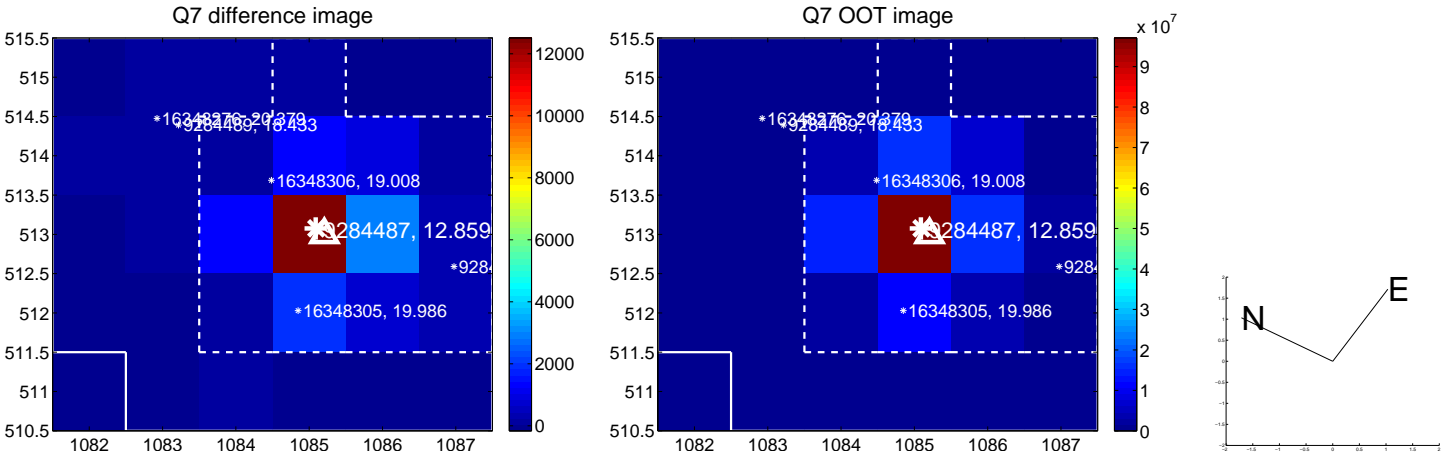
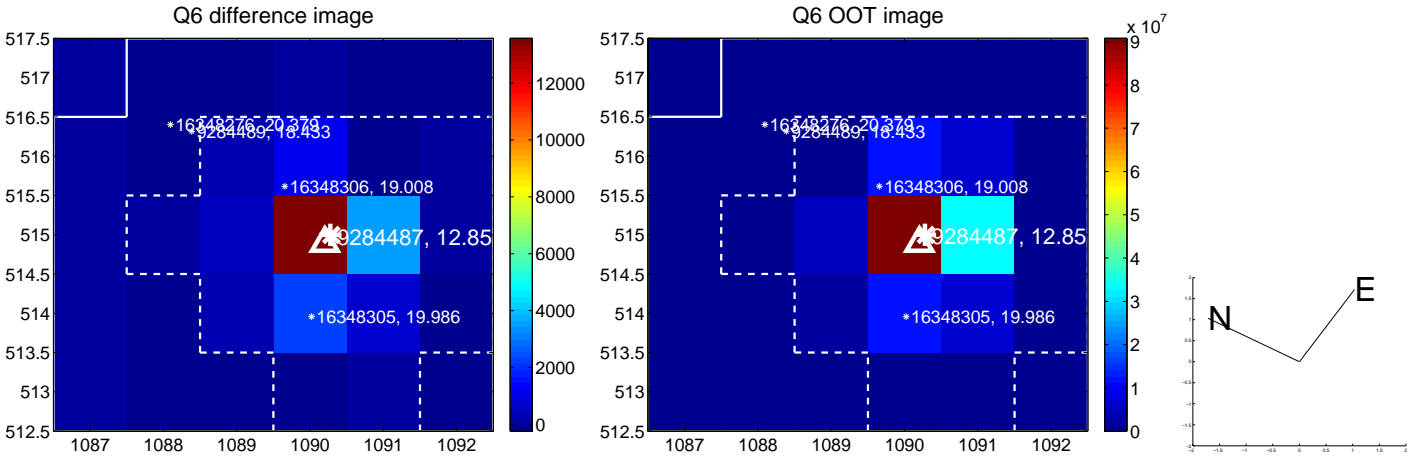
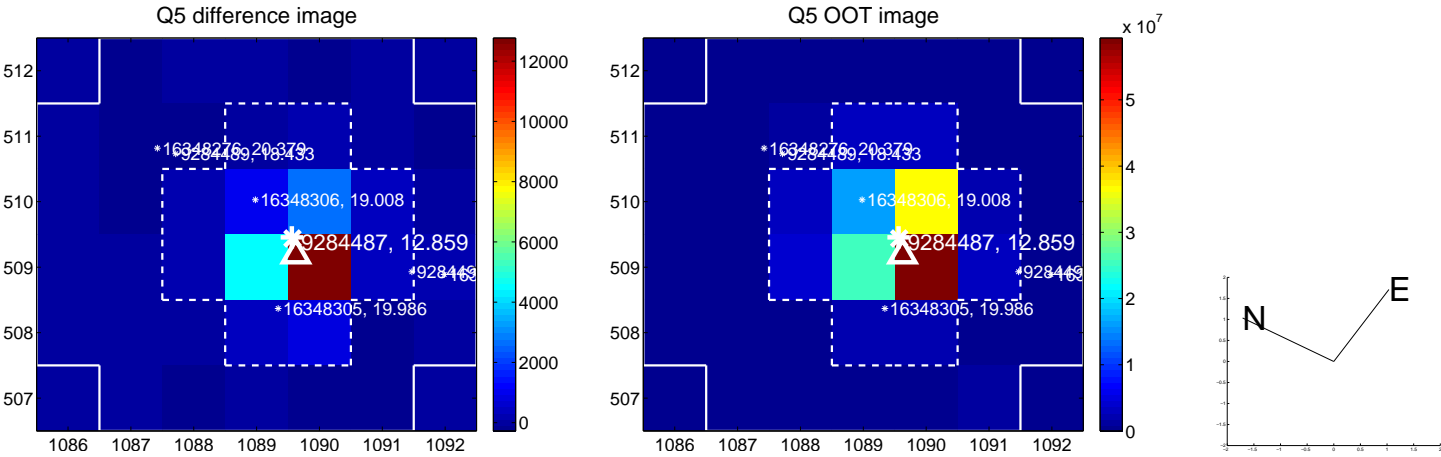


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

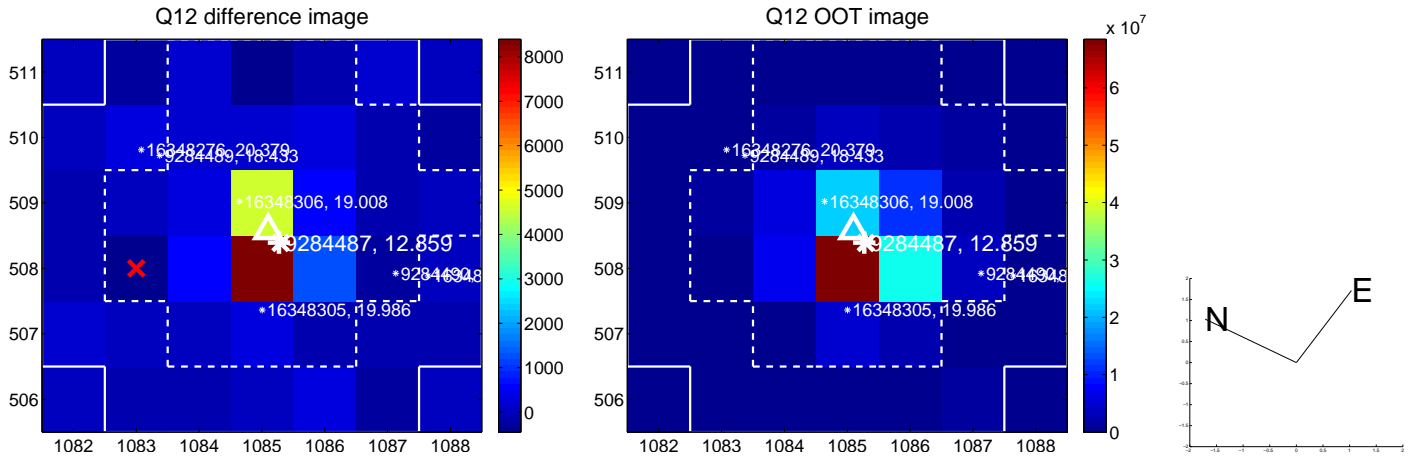
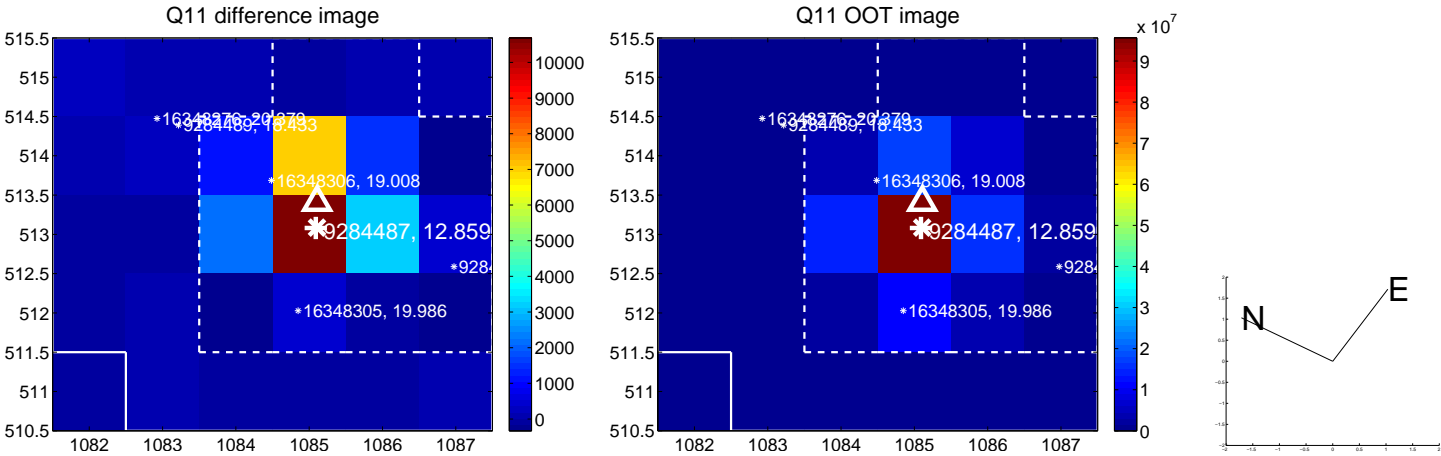
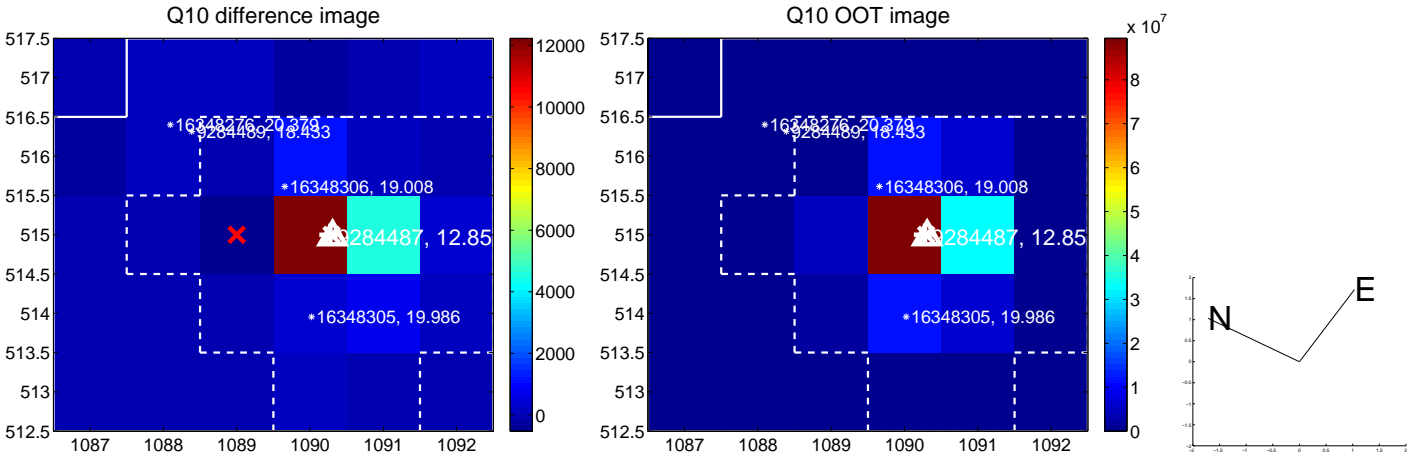
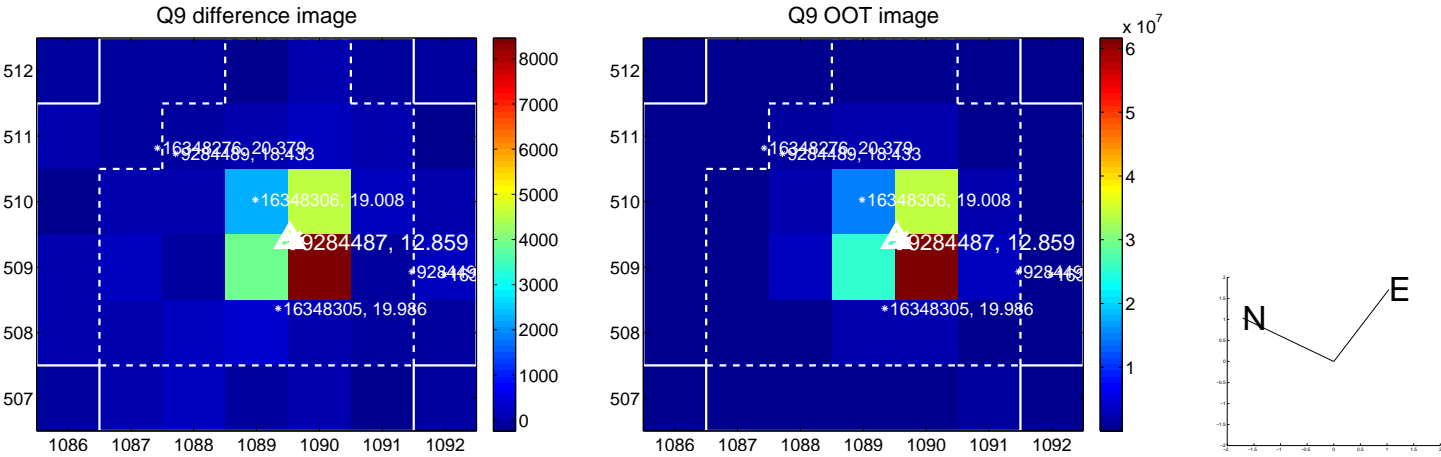
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



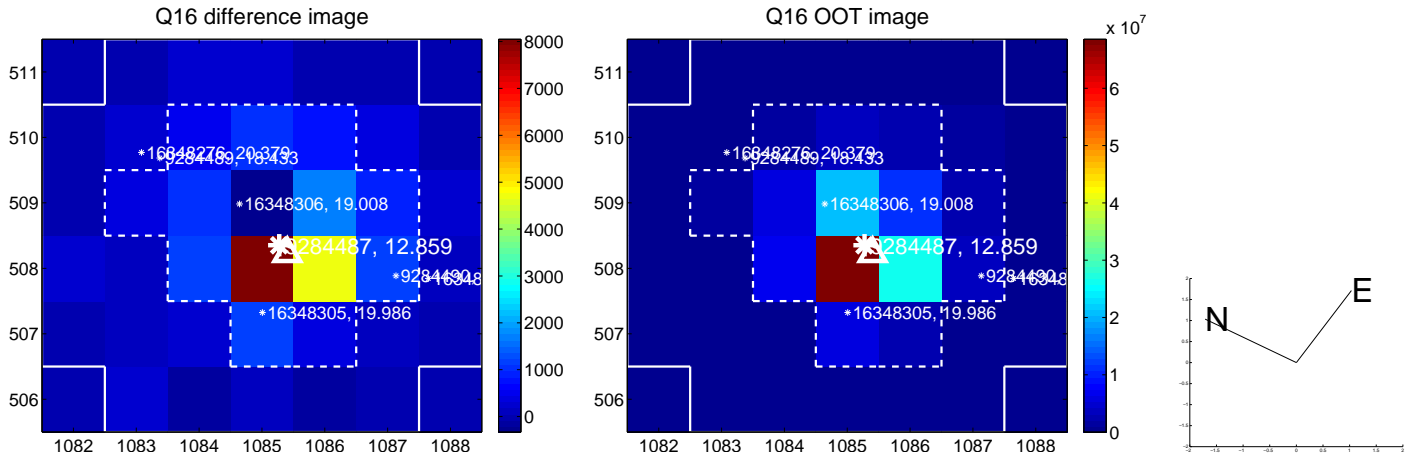
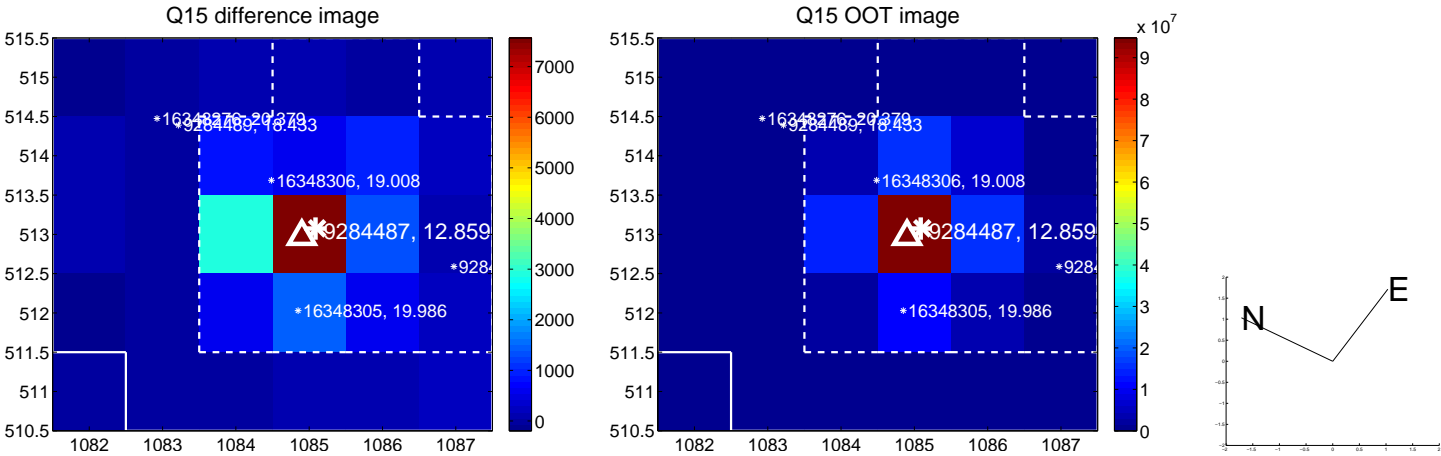
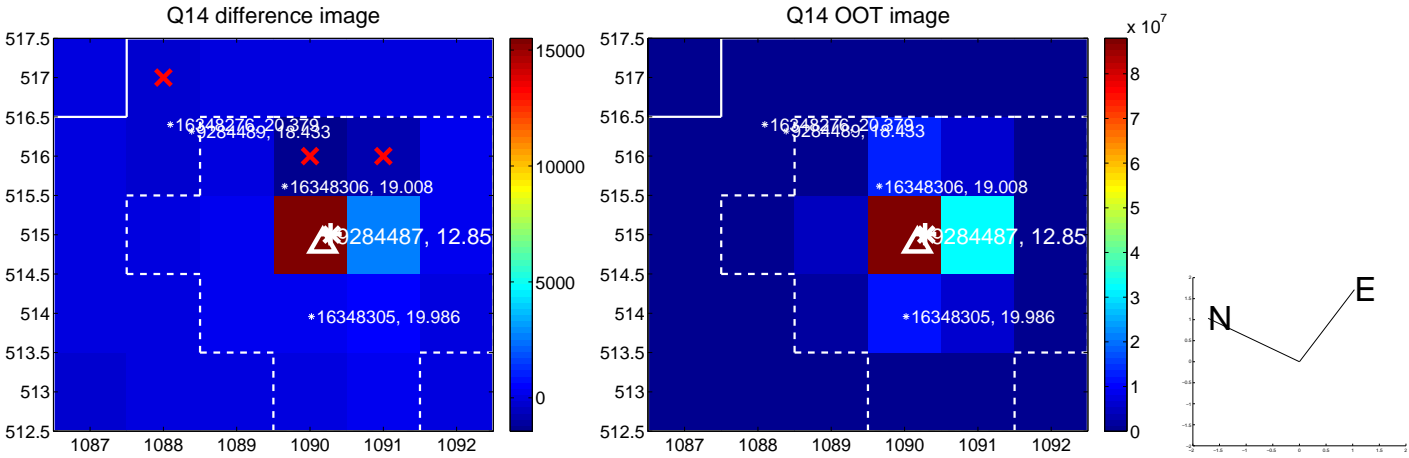
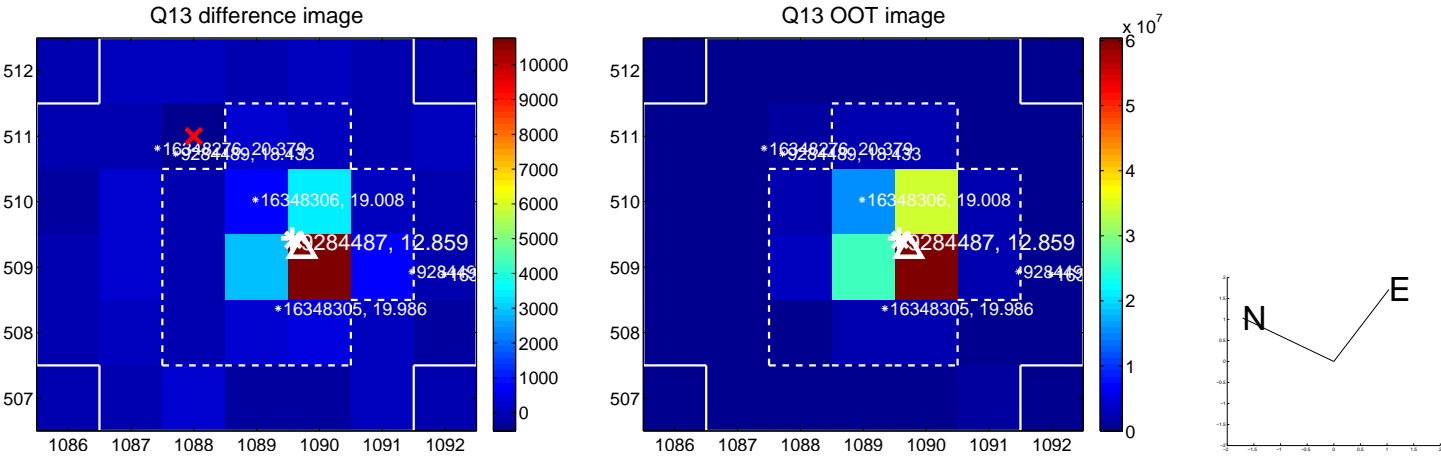
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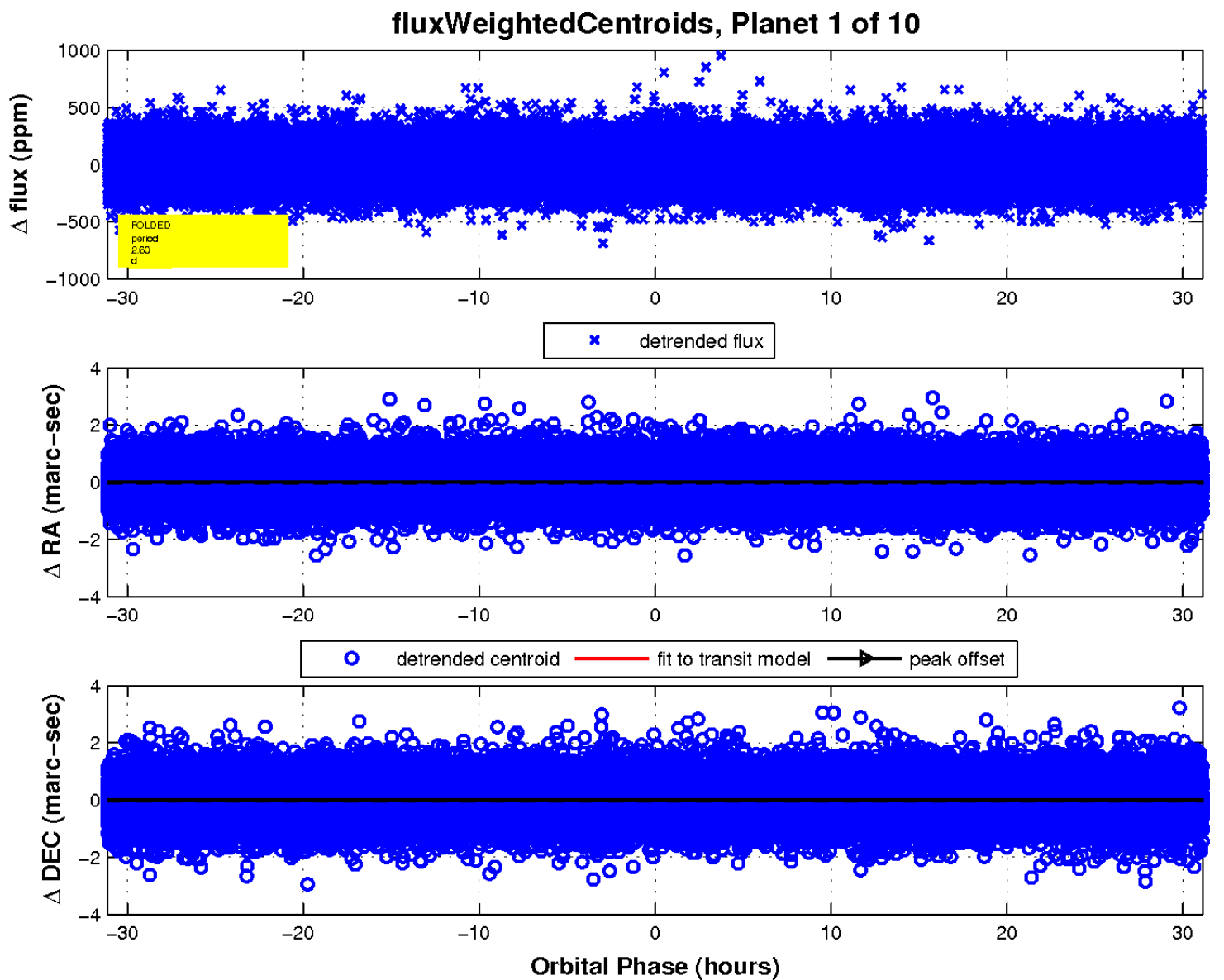
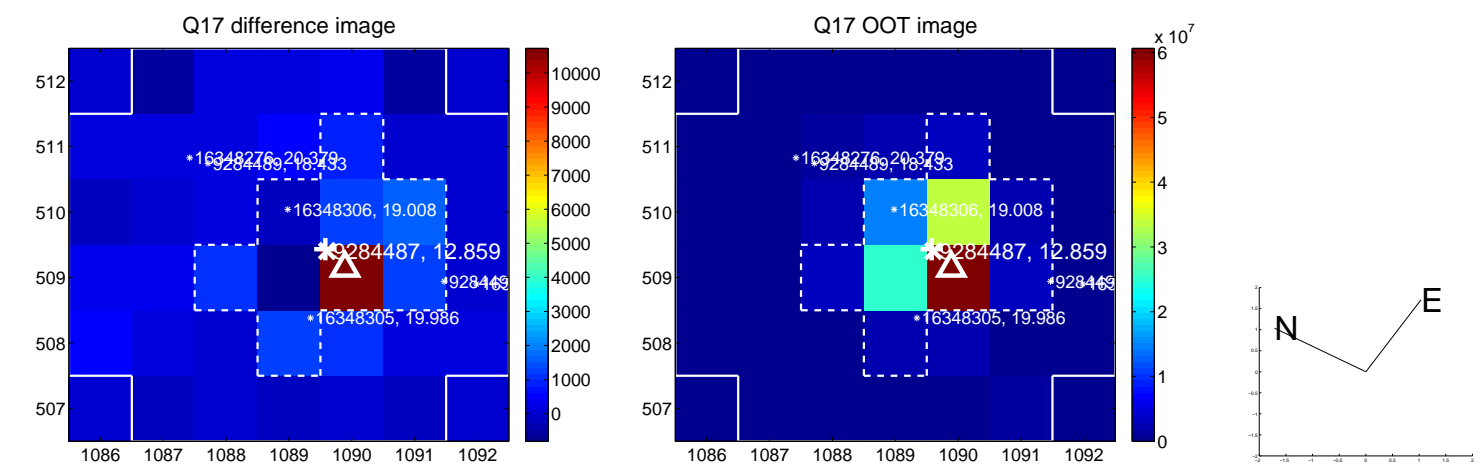
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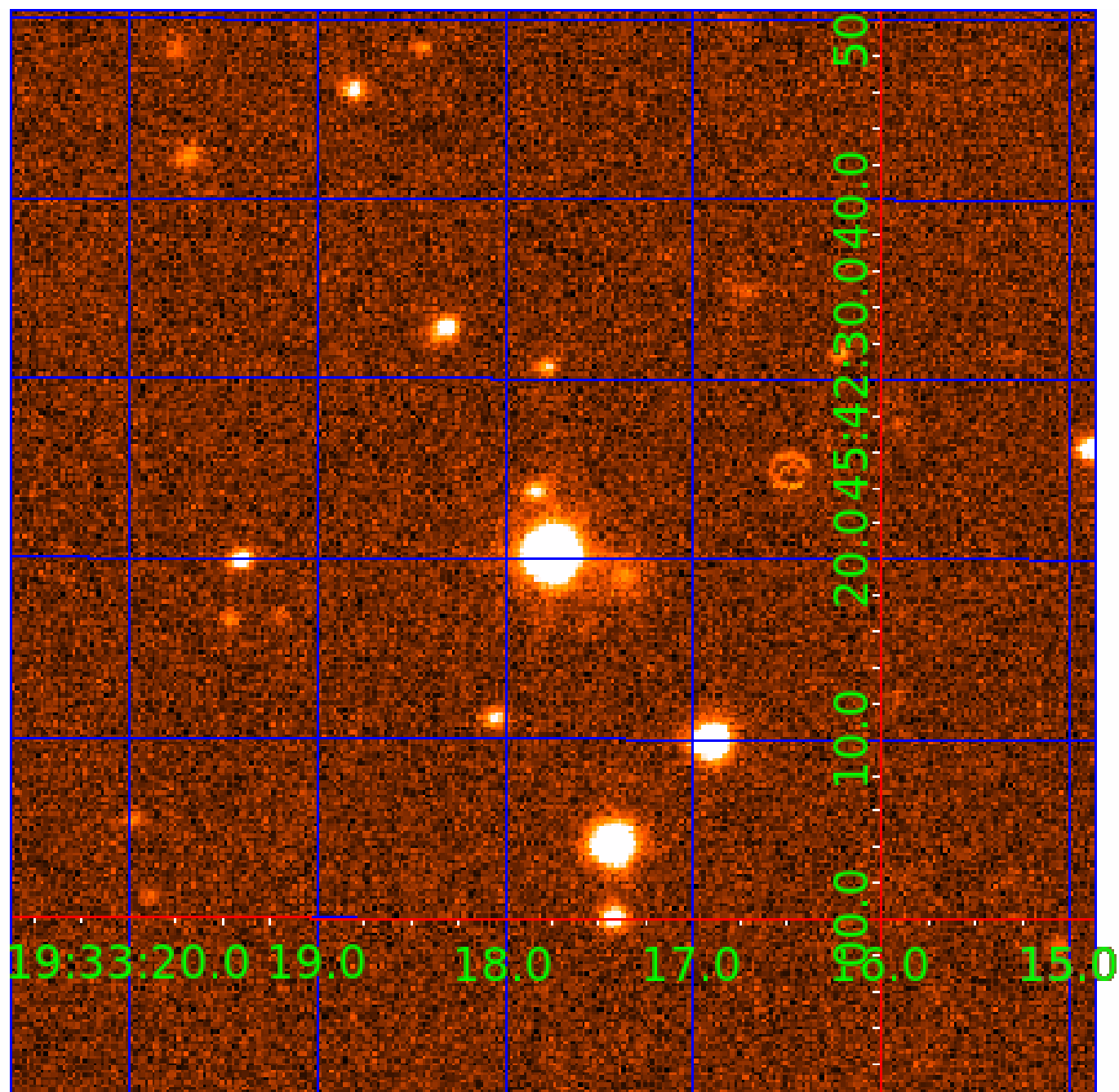


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UKIRT Image

Declination



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009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

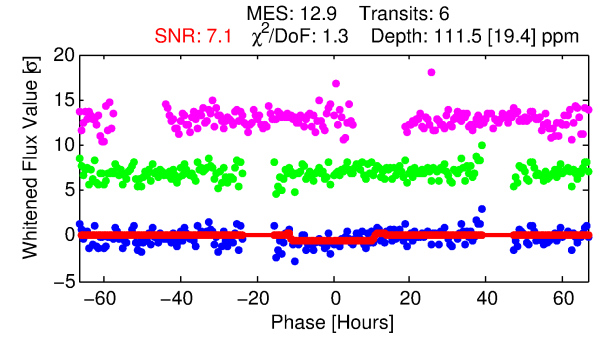
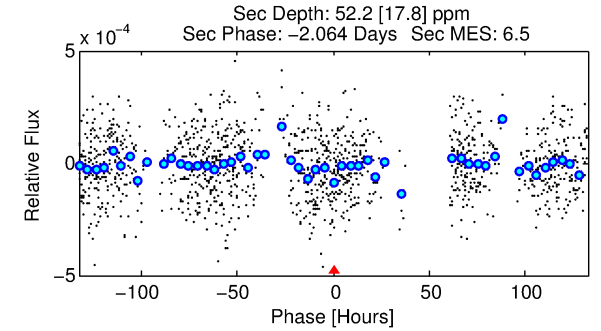
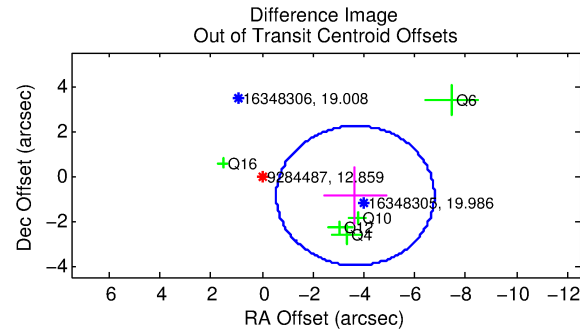
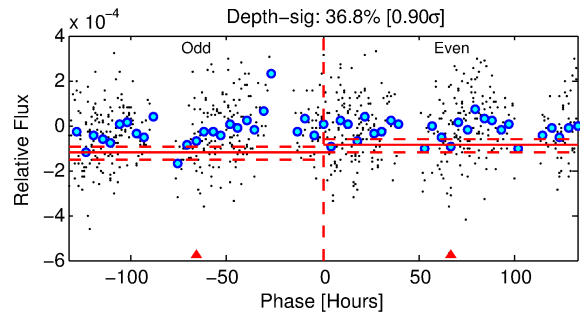
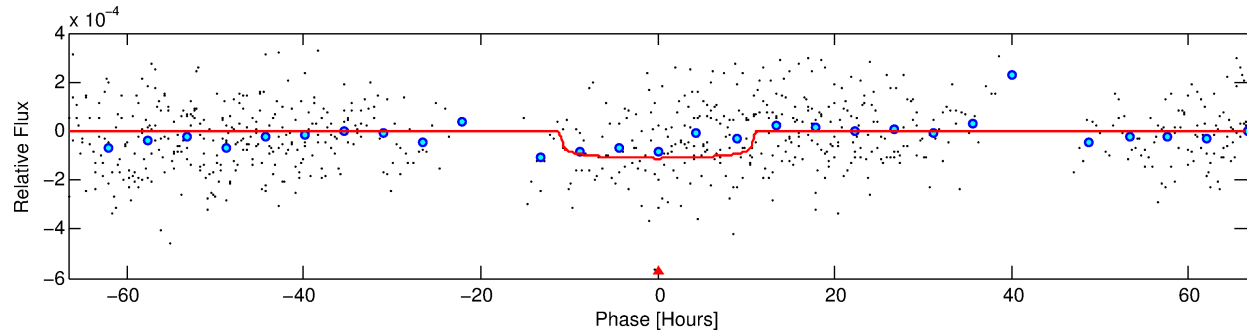
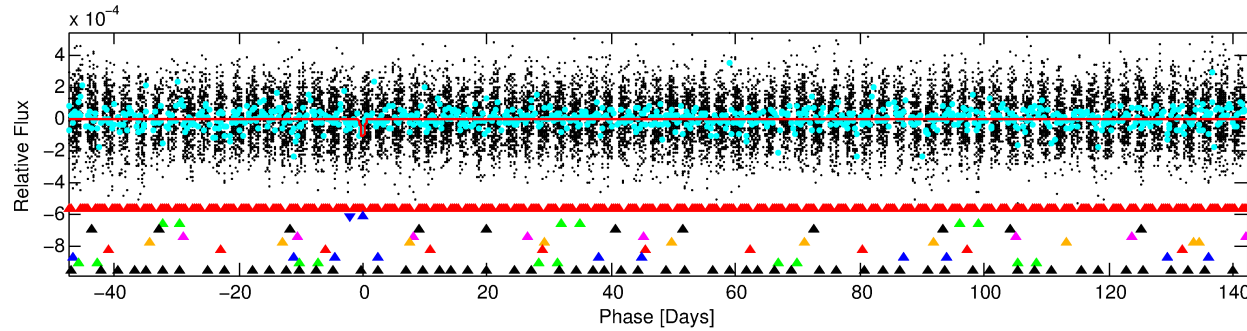
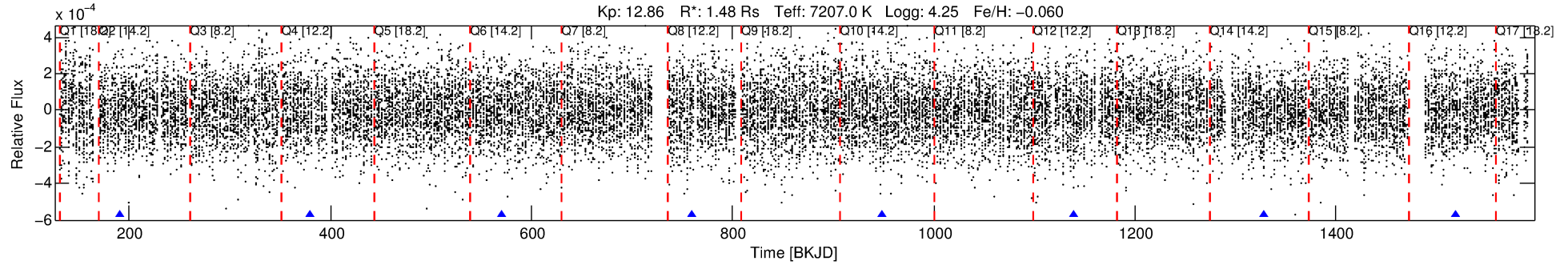
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-02

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 2 of 10 Period: 189.646 d



DV Fit Results:

Period = 189.64581 [0.01416] d
Epoch = 190.7128 [0.0788] BKJD
Rp/R* = 0.0105 [0.0026]
a/R* = 43.36 [62.32]
b = 0.76 [0.78]
Seff = 9.97 [4.16]
Teq = 453 [47] K
Rp = 1.70 [0.73] Re
a = 0.7286 [0.2036] AU
Ag = 5272.04 [3801.33] [1.39 σ]
Teffp = 5970 [935] K [5.89 σ]

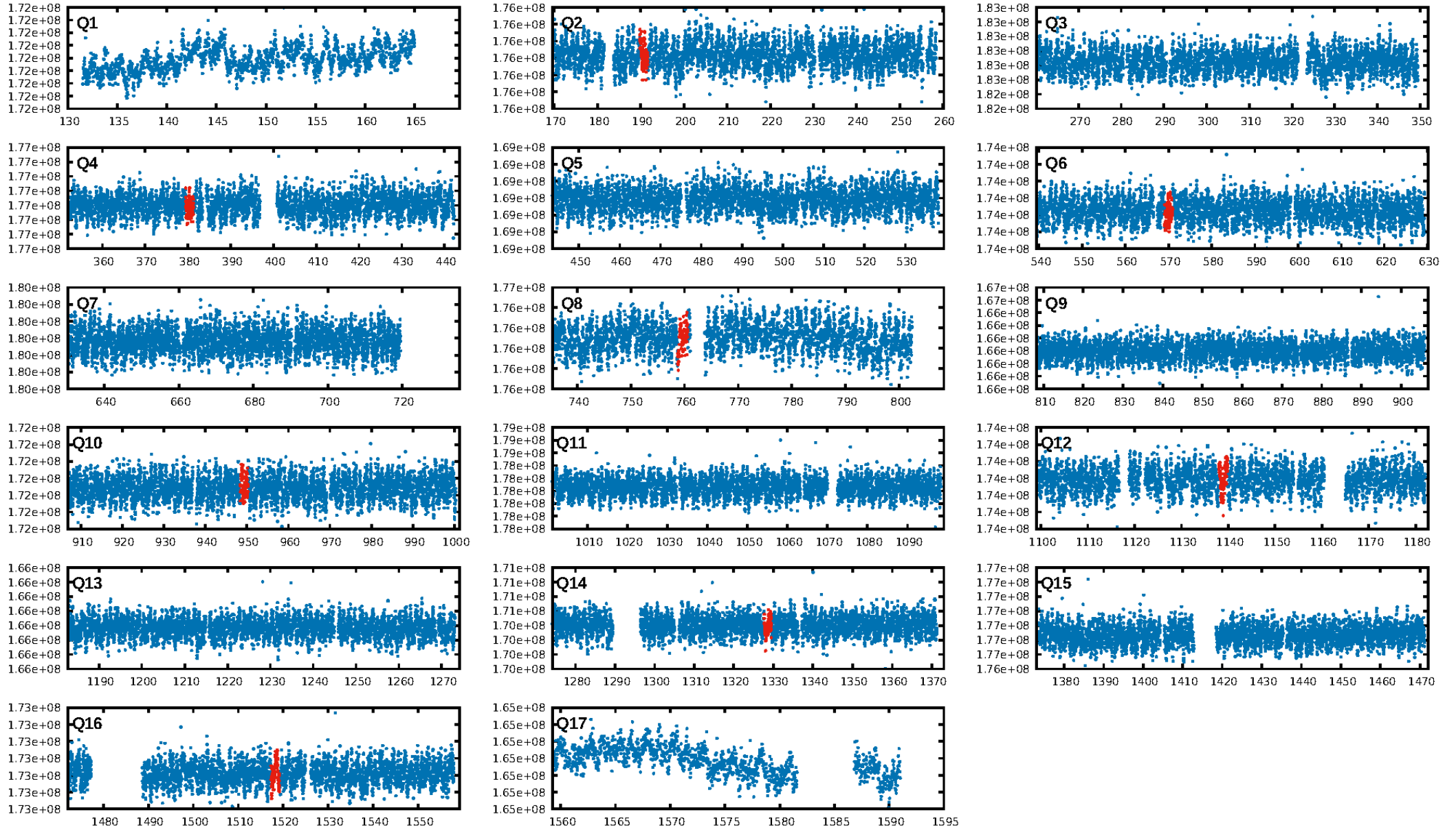
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.07 σ]
LongPeriod-sig: 100.0% [63.14 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.71e-18
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.948
Centroid-sig: 4.2%
Centroid-so: 2.031 arcsec [2.01 σ]
OotOffset-rm: 3.777 arcsec [3.65 σ]
KicOffset-rm: 3.803 arcsec [3.82 σ]
OotOffset-st: 2/0/3/0 [5]
KicOffset-st: 2/0/3/0 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 0.00 [0/7]

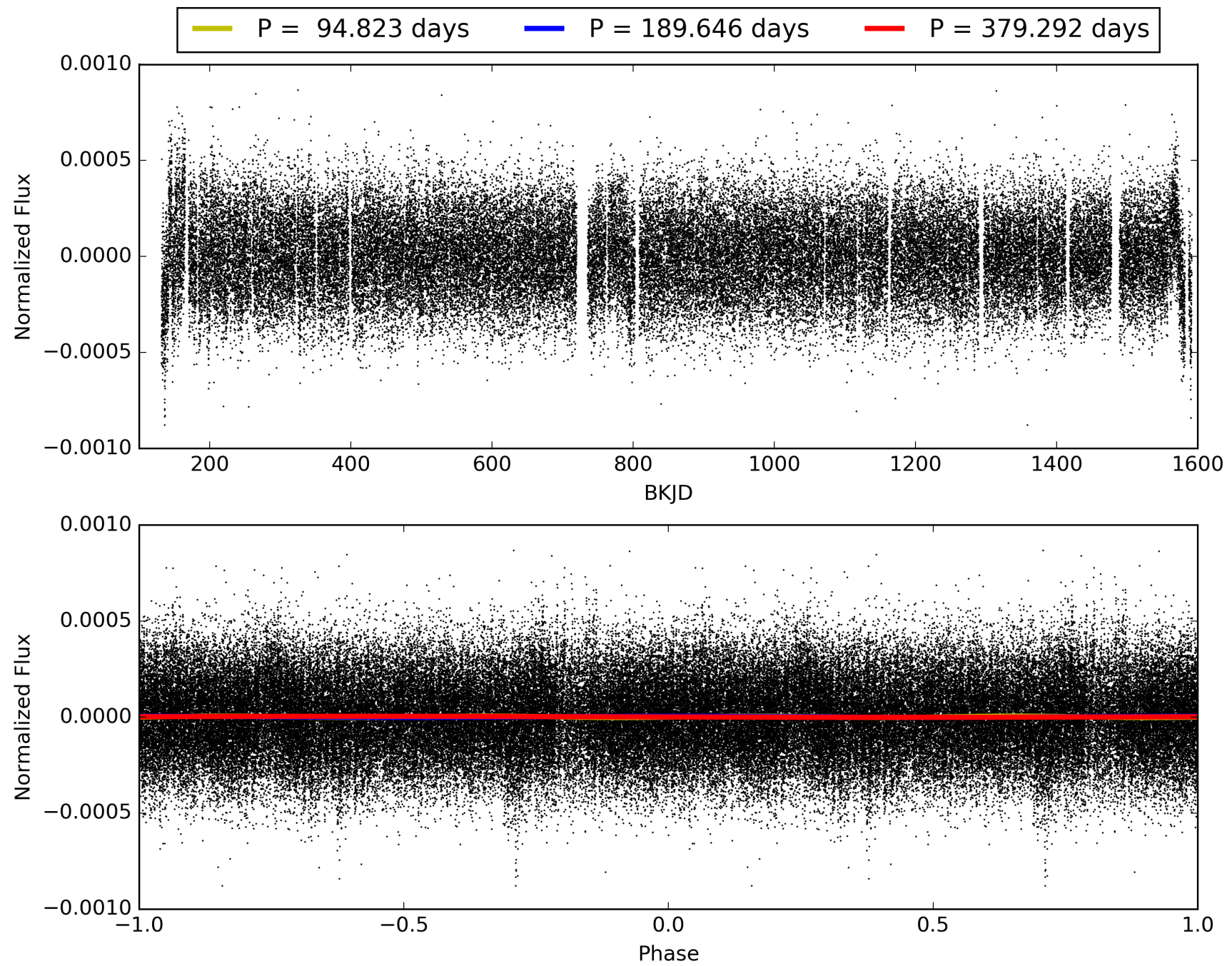
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:39:51 Z

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

TCE 009284487-02, PDC Light Curves

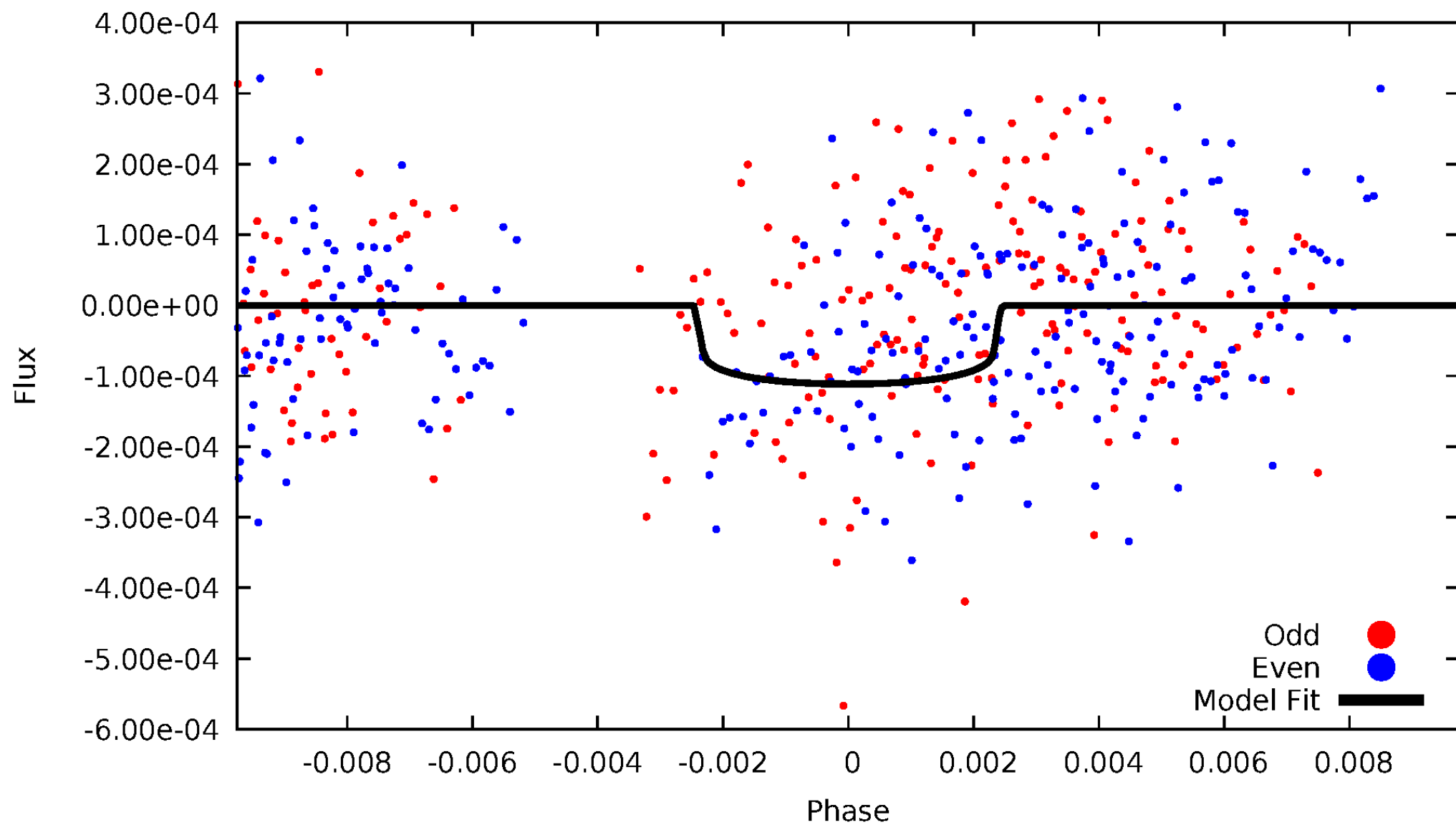


TCE 009284487-02



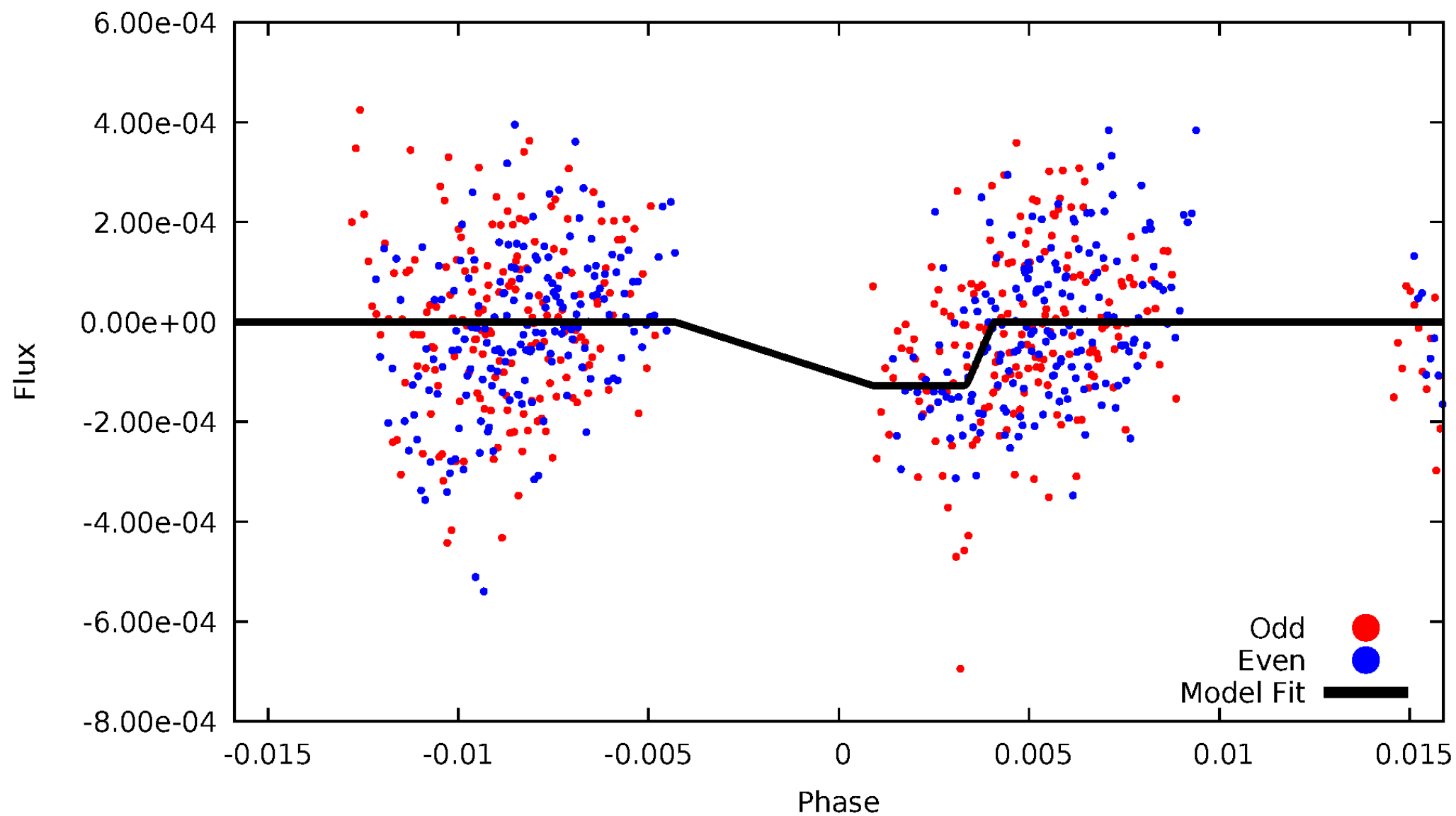
DV Odd/Even

TCE 009284487-02



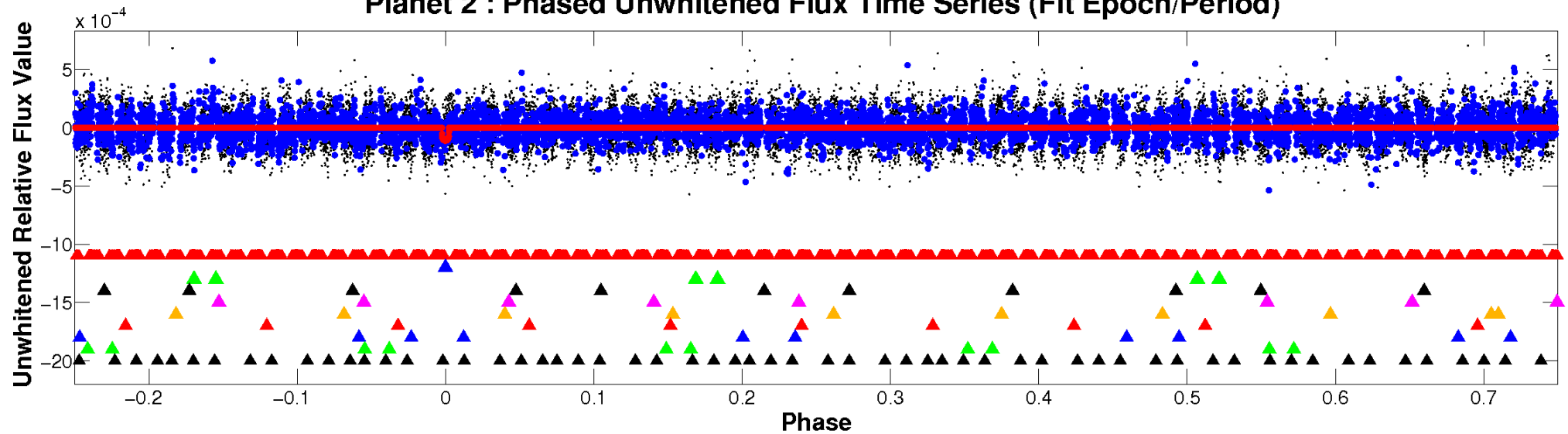
ALT Odd/Even

TCE 009284487-02

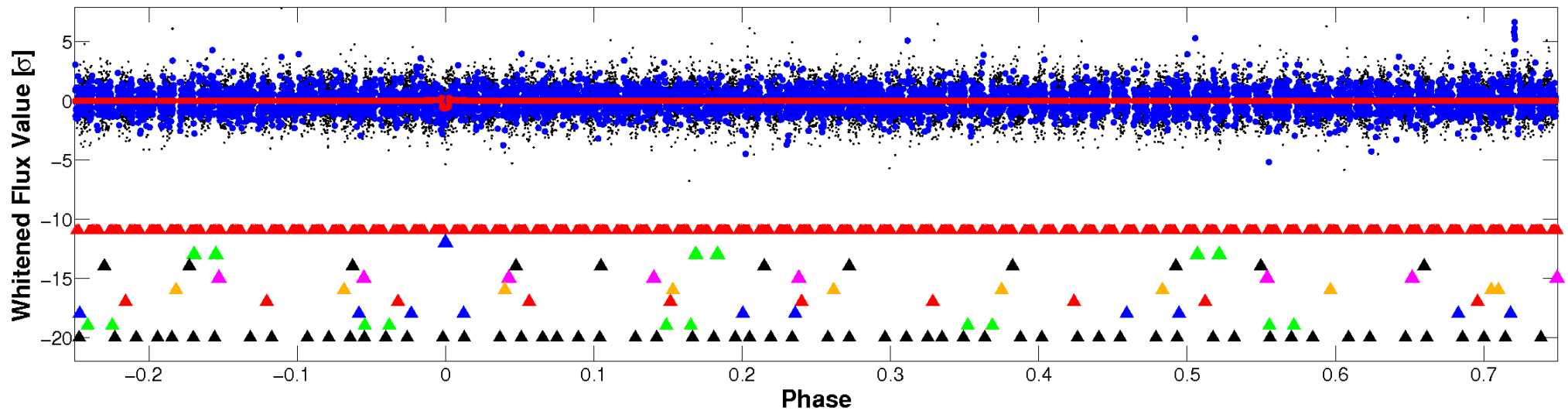


Non-Whitened Vs. Whitened Light Curve

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

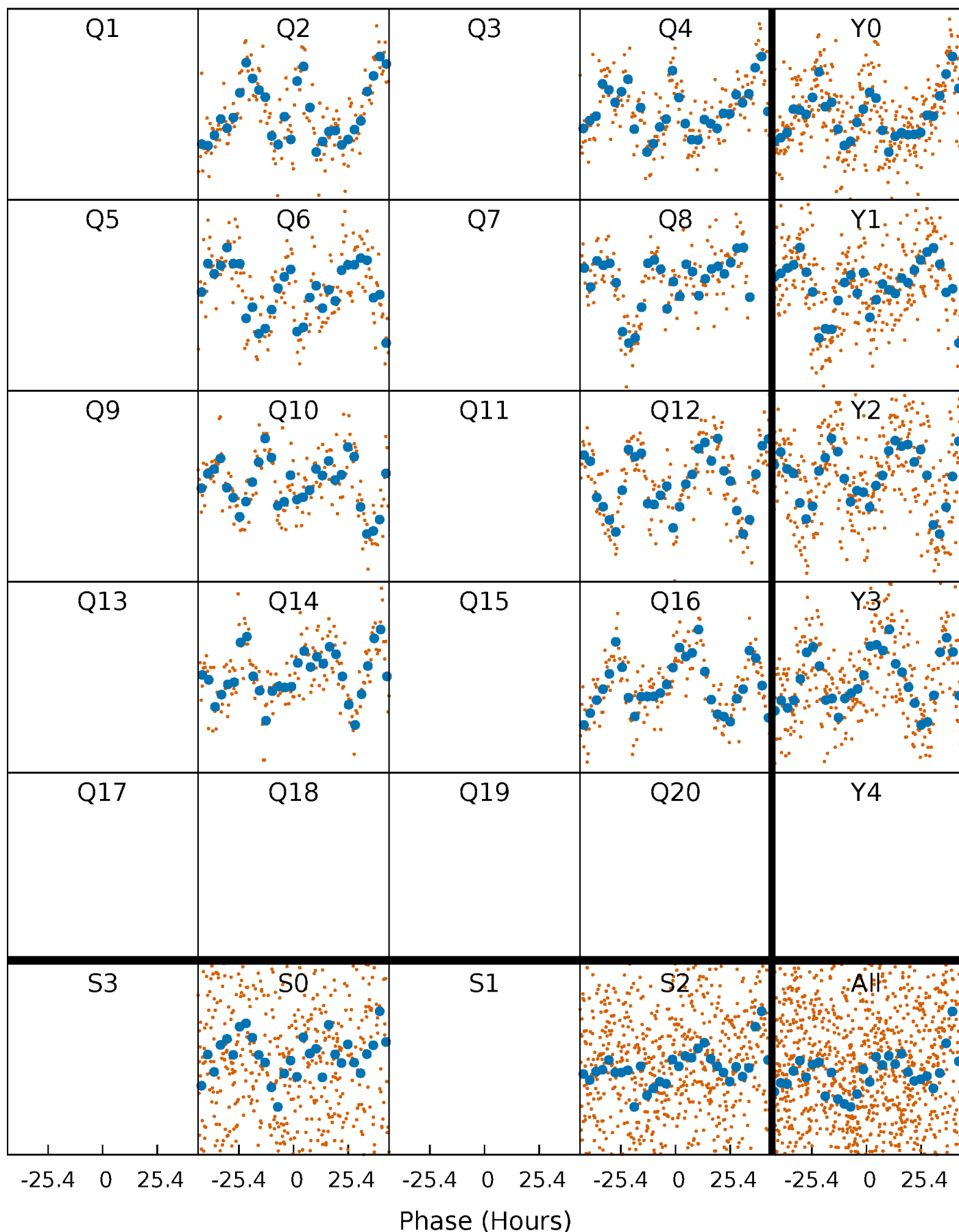


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



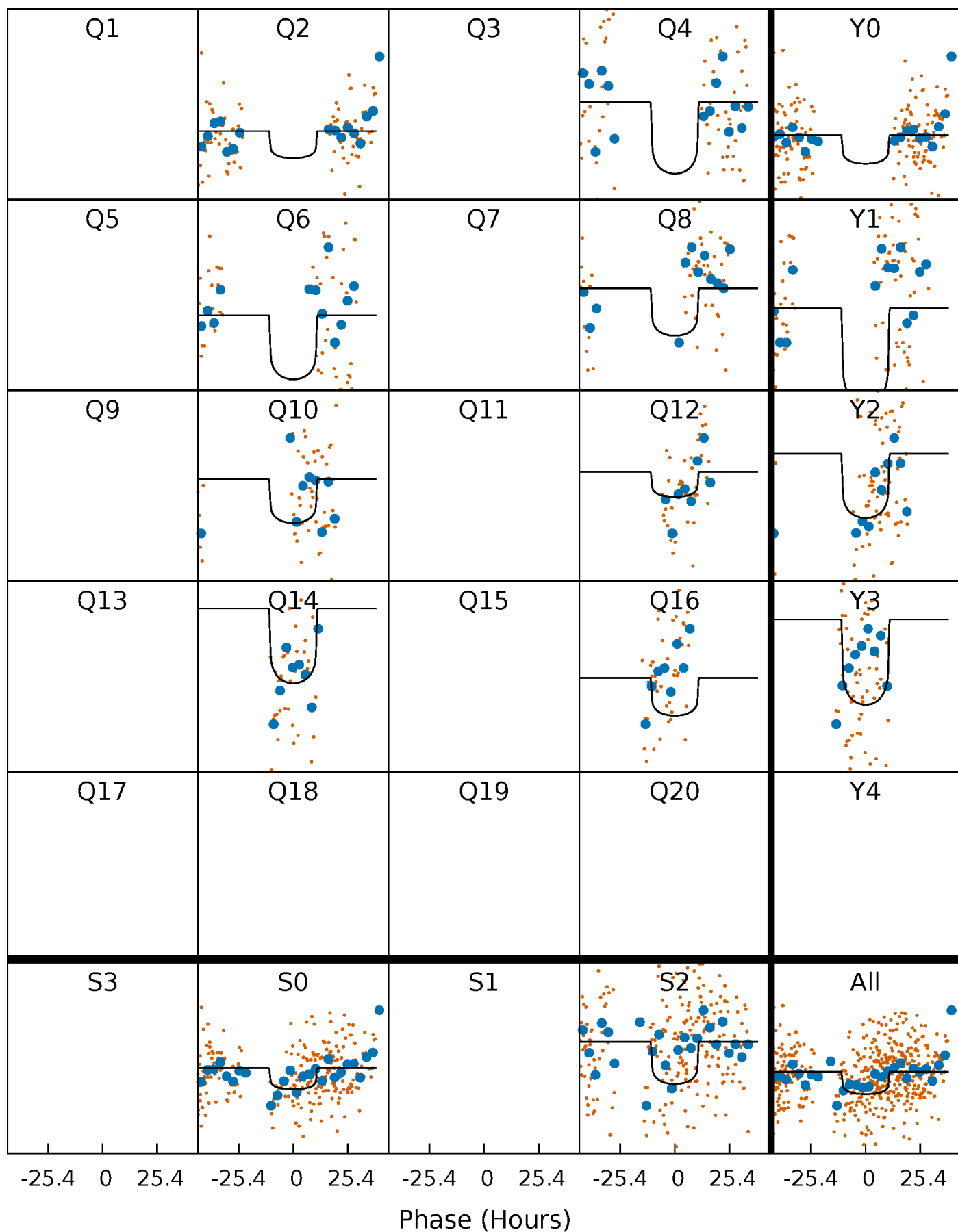
PDC Quarter-Phased Transit Curves

TCE 009284487-02 P=189.645814 Days $T_0=190.712818$ (BKJD)



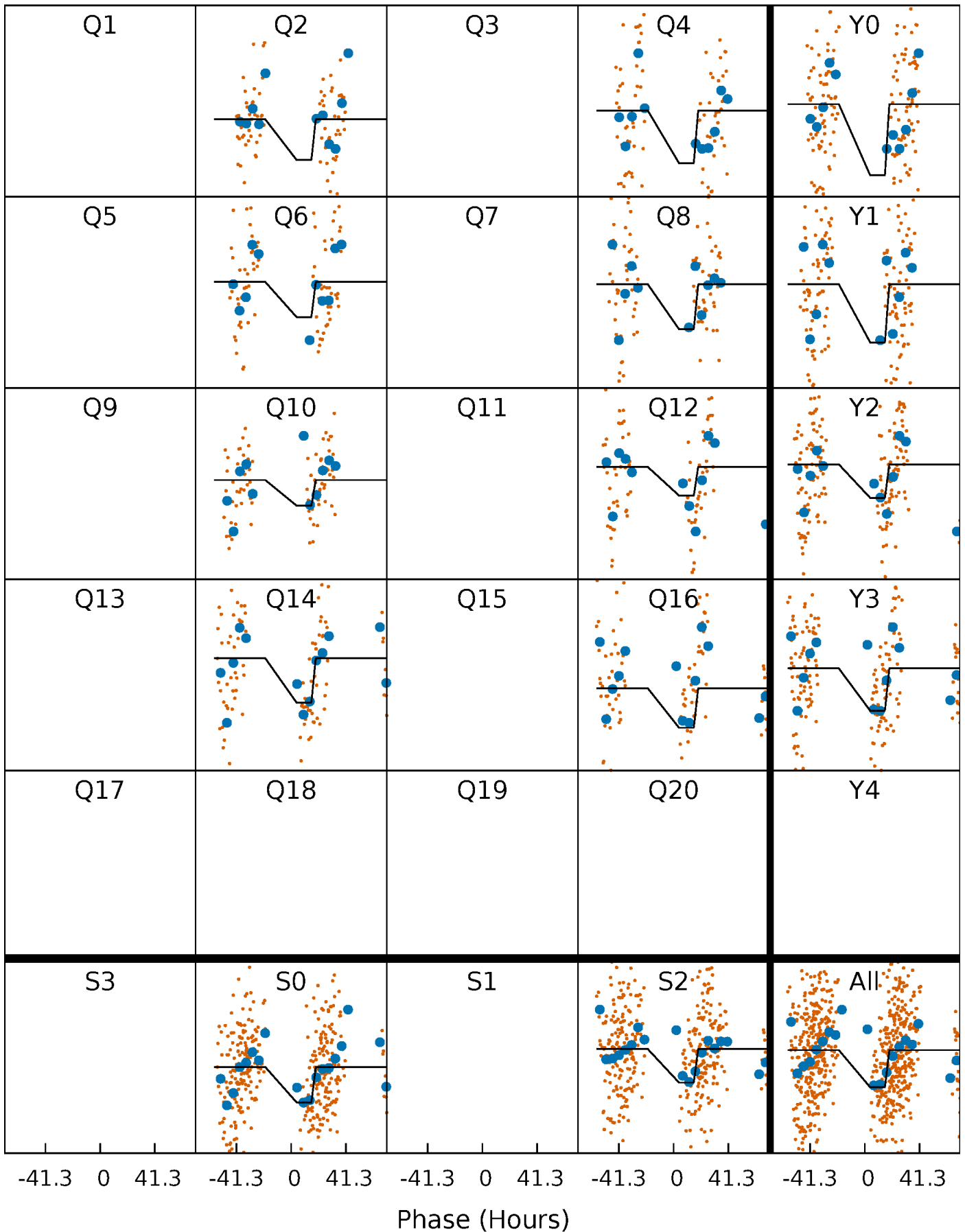
DV Quarter-Phased Transit Curves

TCE 009284487-02 P=189.645814 Days $T_0=190.712818$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

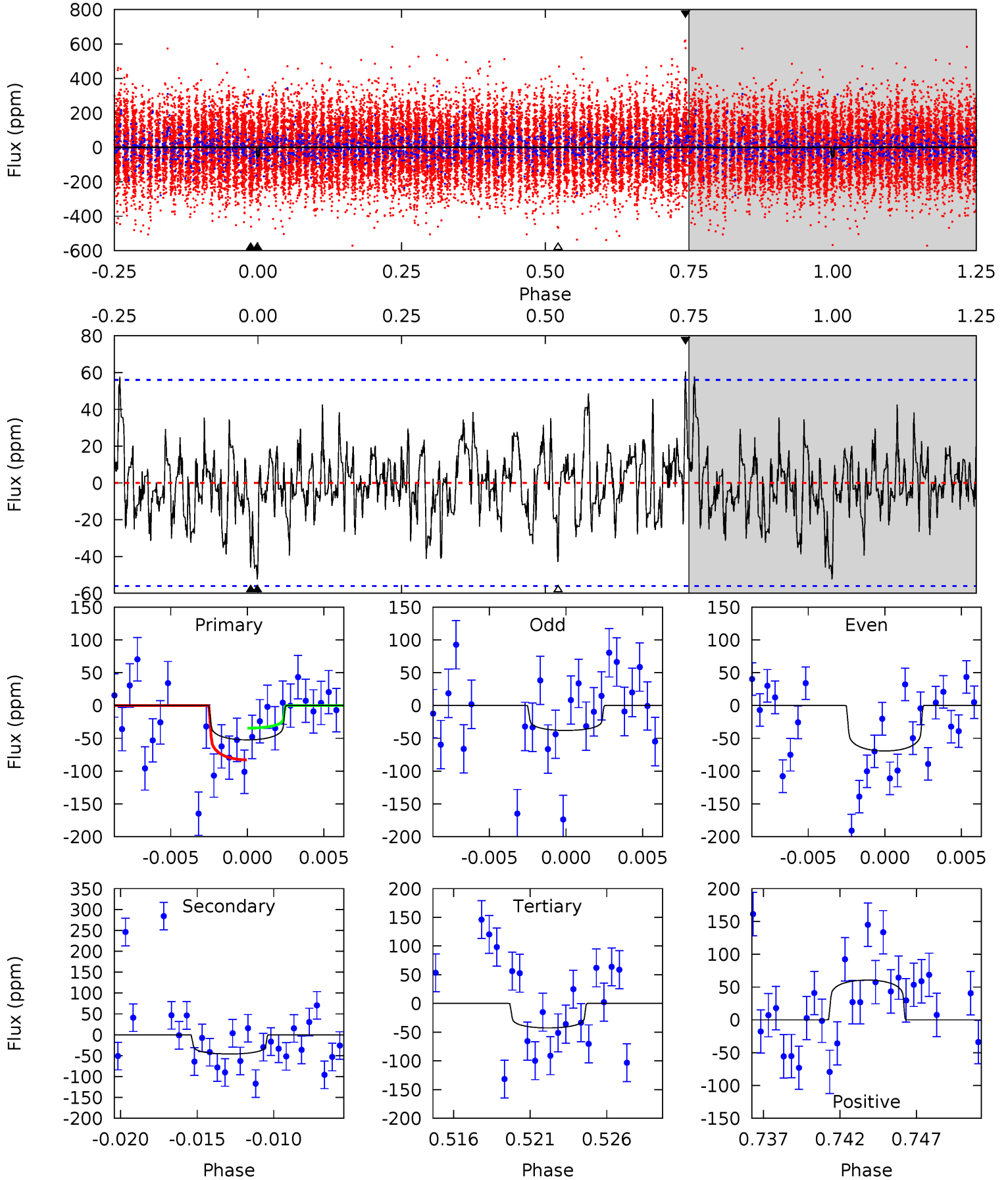
TCE 009284487-02 $P=189.555325$ Days $T_0=190.545472$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-02, P = 189.645814 Days, E = 1.067004 Days

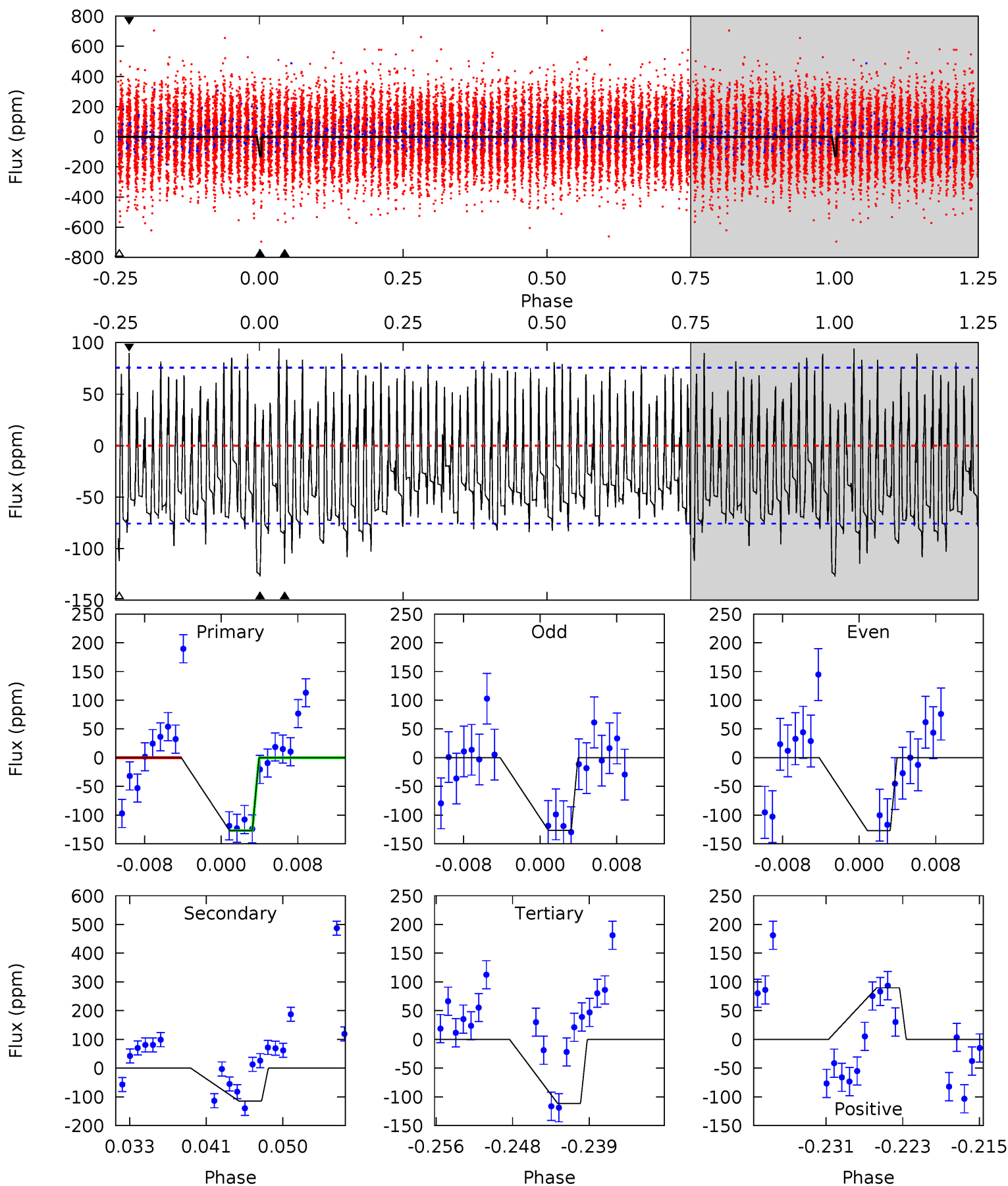
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.82	4.24	3.93	5.58	5.16	2.81	1.46	0.90	-0.76	0.31	-1.34	1.44	-3.76	0.54	2.11



Alt Model-Shift Uniqueness Test

009284487-02, P = 189.555325 Days, E = 0.990147 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.49	7.67	7.48	6.02	5.06	2.64	2.75	1.01	2.47	0.19	1.65	0.02	0.95	0.43	0



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-46 ± 11	$1.74^{+0.52}_{-0.42}$	638^{+54}_{-36}	5719^{+909}_{-701}	4317^{+3575}_{-1983}
Alt.	-115 ± 15	$1.87^{+0.53}_{-0.45}$	644^{+43}_{-41}	7011^{+1232}_{-863}	9634^{+6655}_{-3970}

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

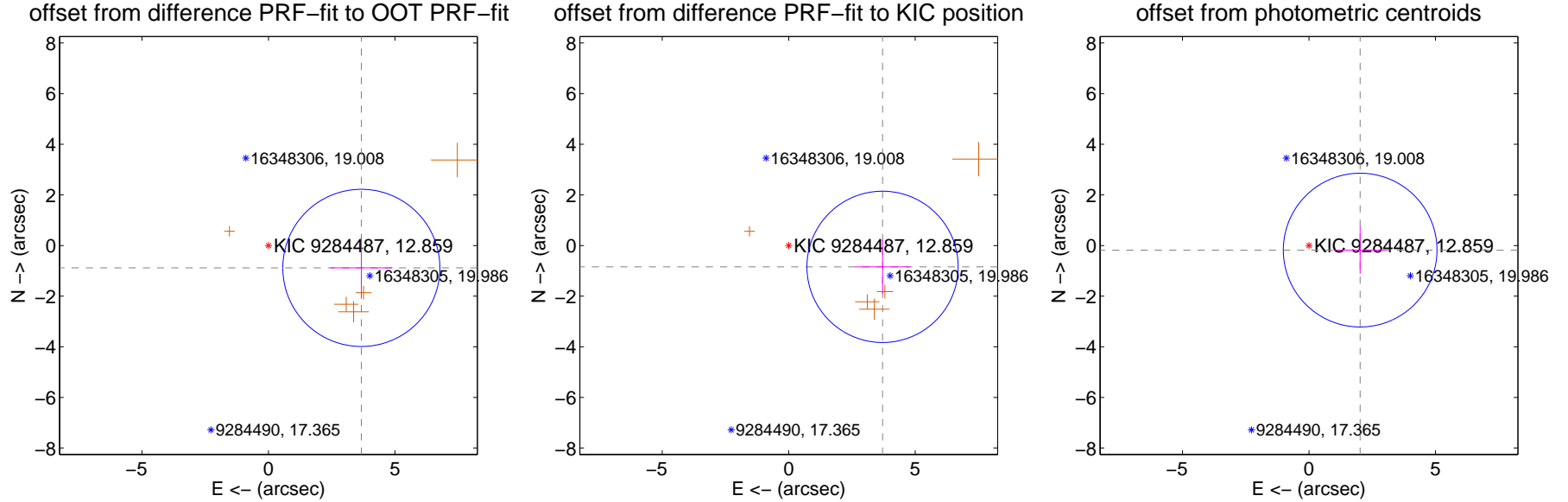
DV Centroid Data

Supplemental centroid analysis for 009284487-02. Kepler magnitude: 12.86. Transit SNR 7.07

There are 0 quarters with good PRF difference image offsets

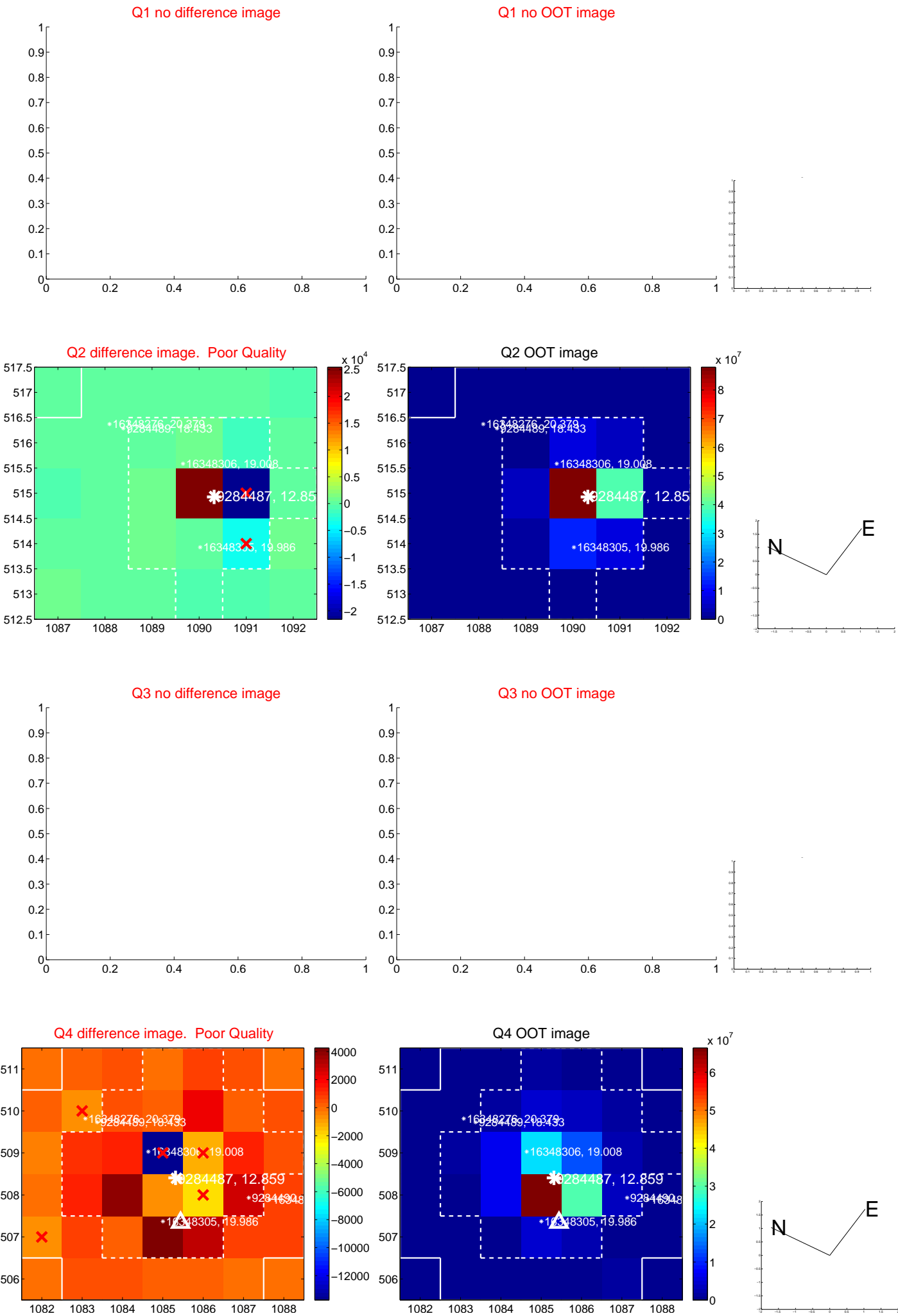
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.777 ± 1.035	3.65	-3.672 ± 1.226	-0.883 ± 1.217
PRF-fit source offset from KIC position	3.803 ± 0.996	3.82	-3.709 ± 1.090	-0.842 ± 1.069
photometric centroid source offset	2.03 ± 1.01	2.01	-2.02 ± 1.01	-0.18 ± 0.94

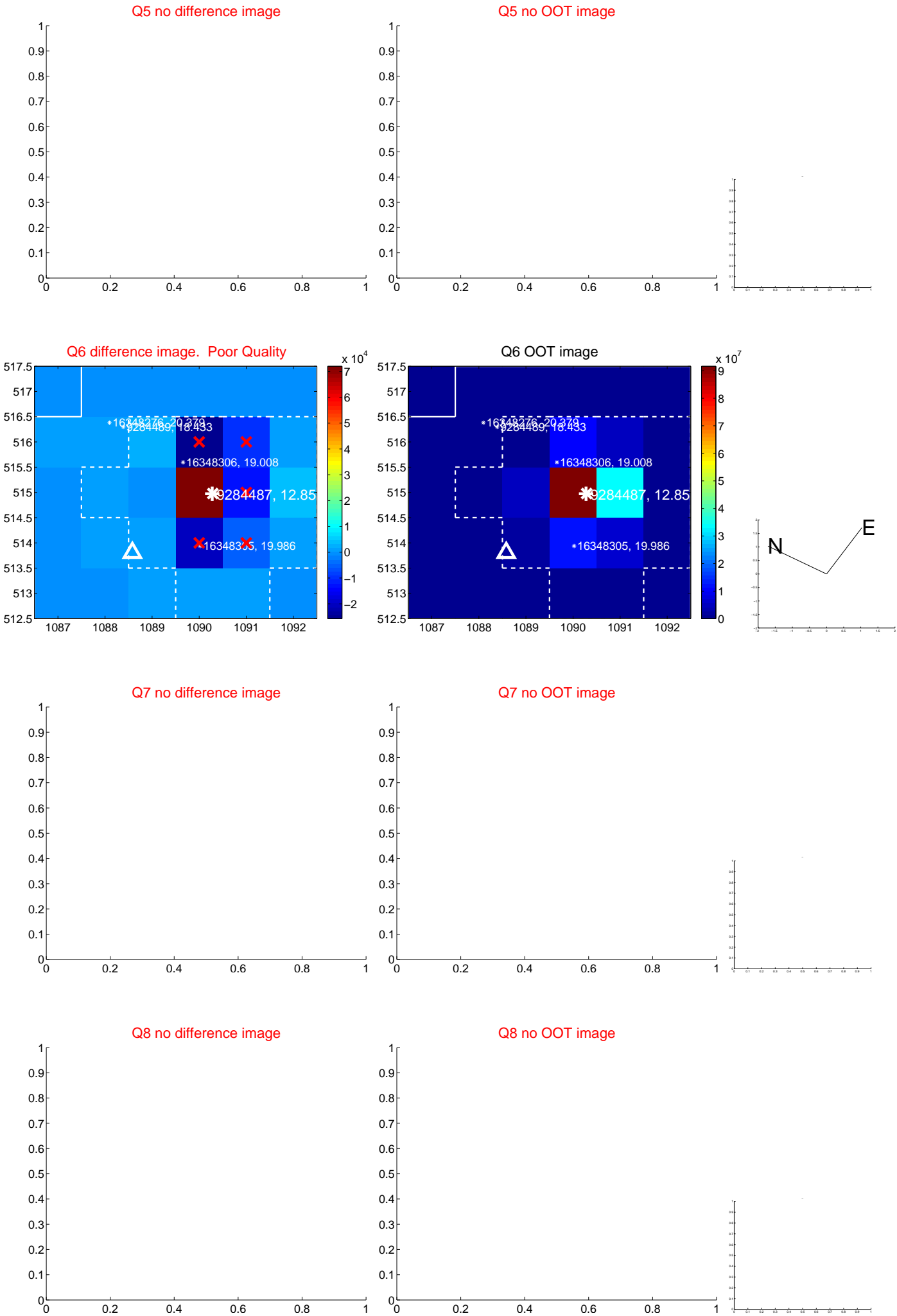


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

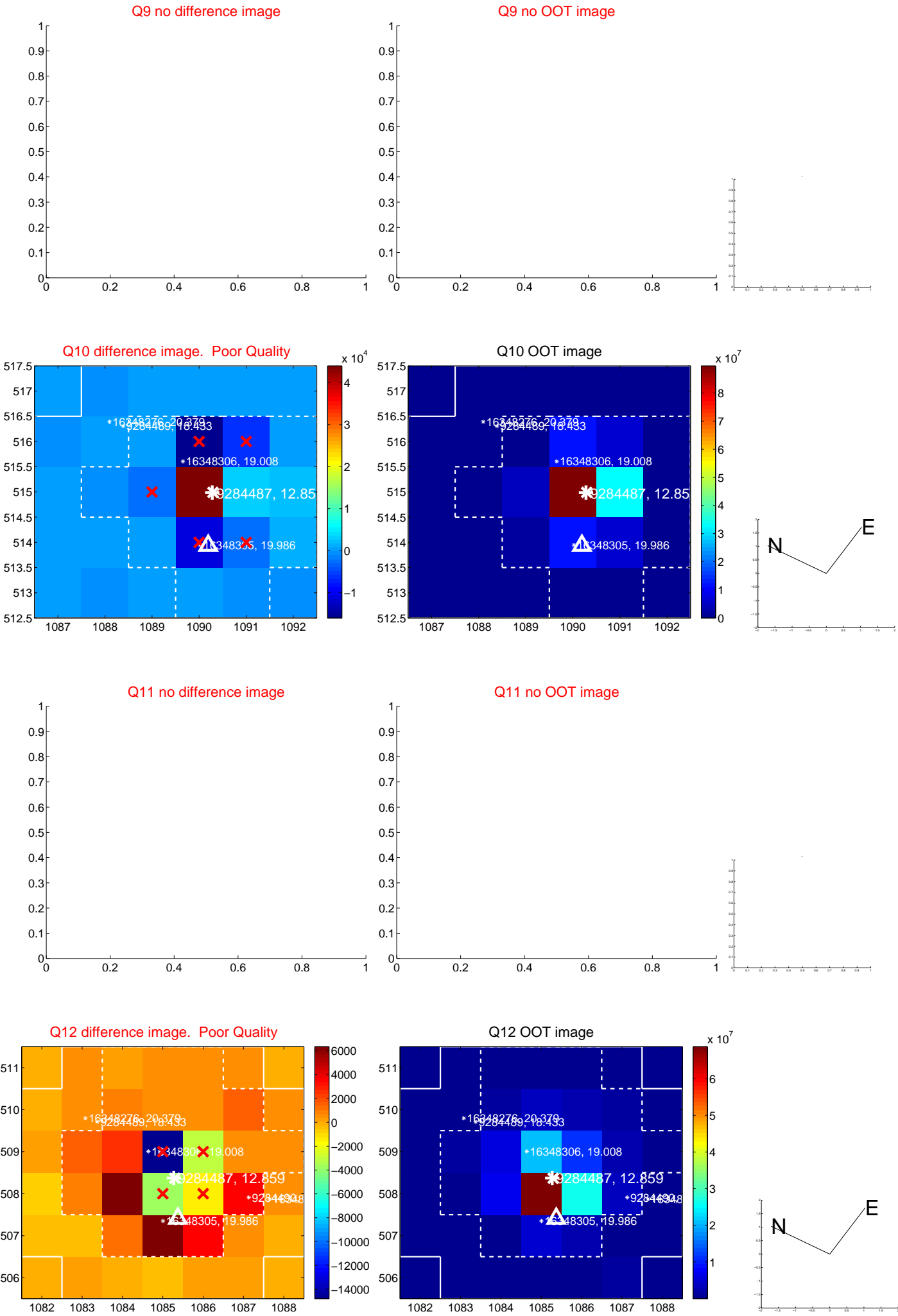
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



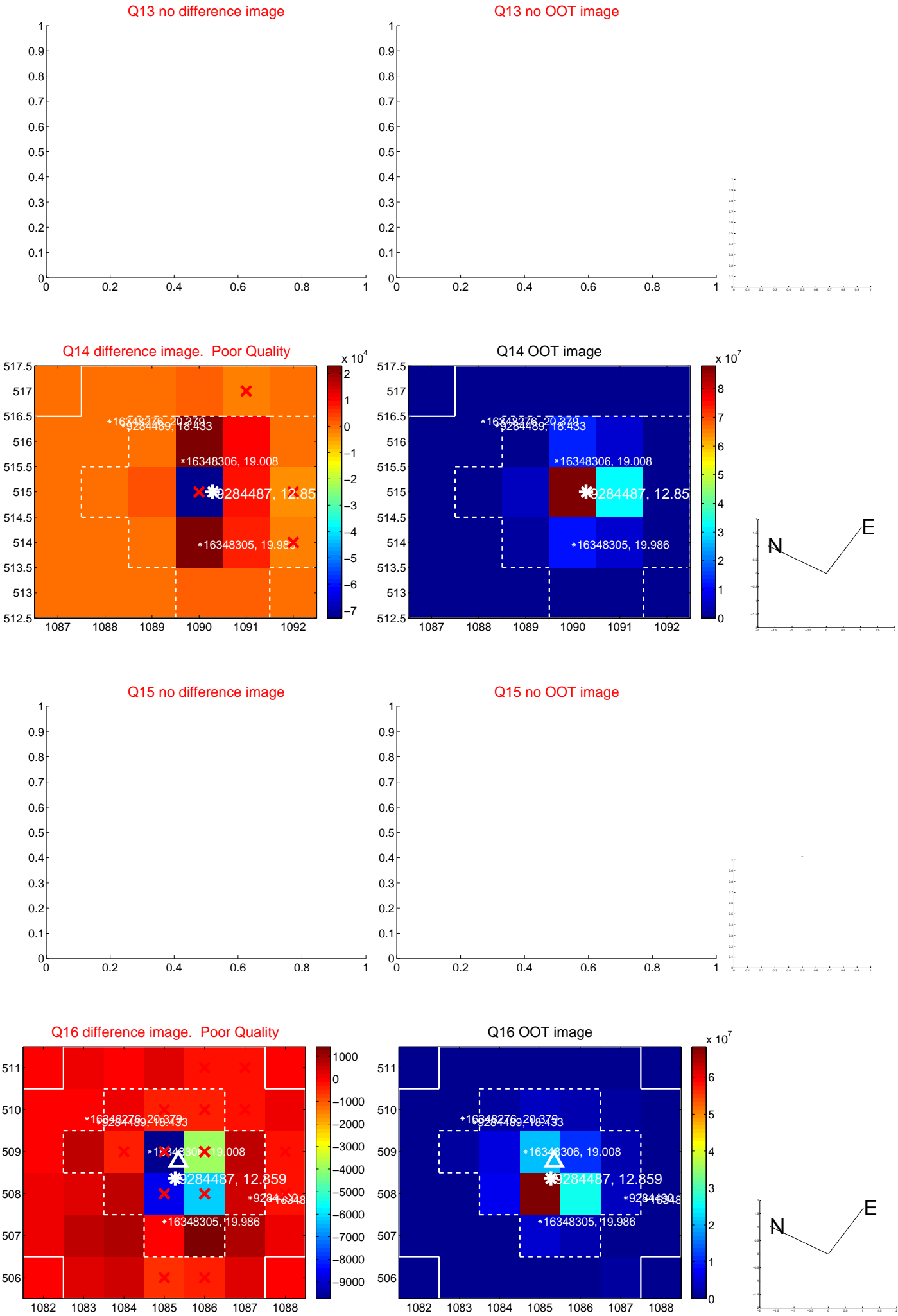
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



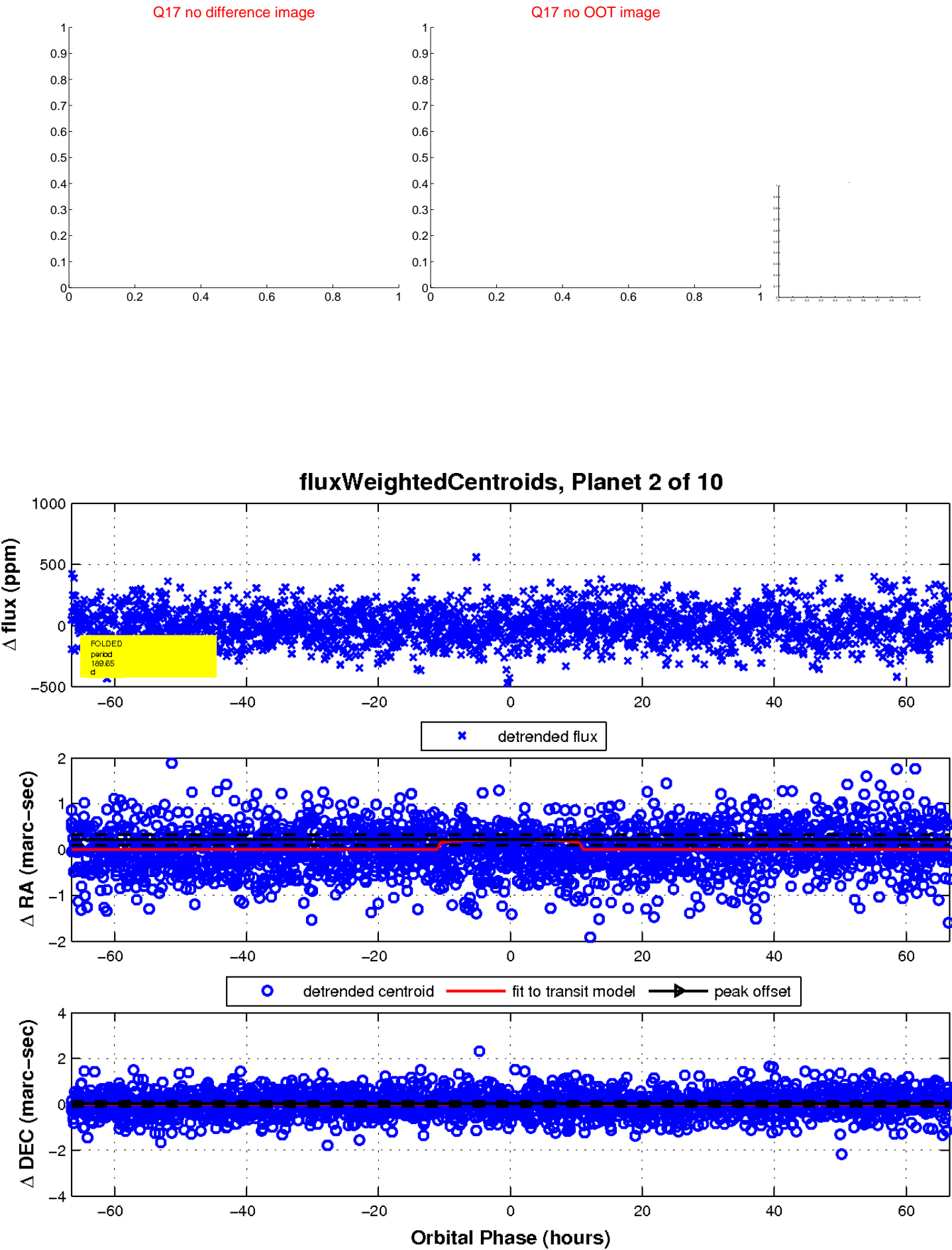
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

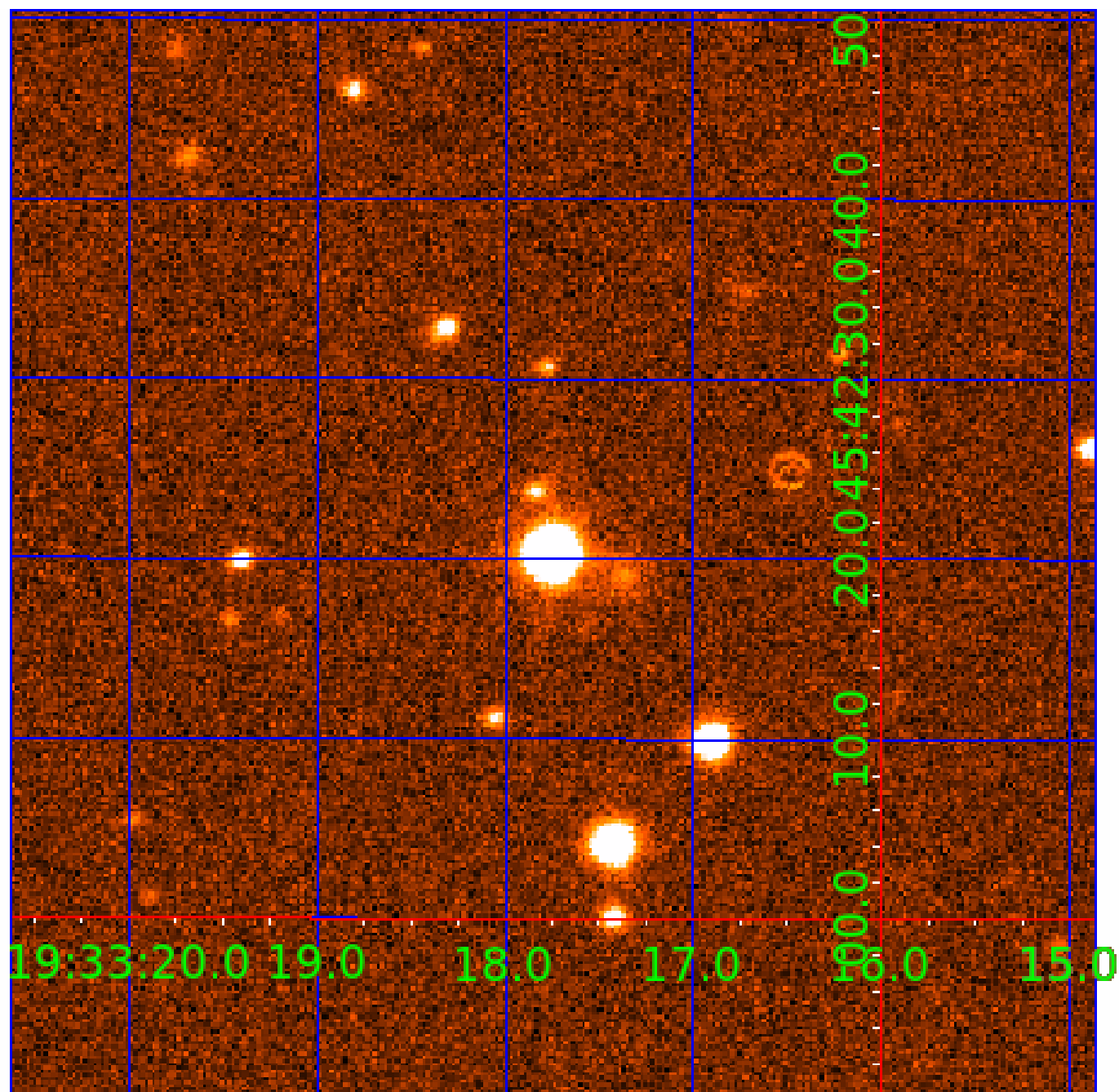


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

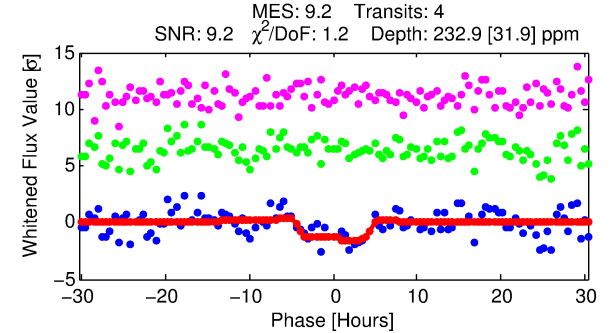
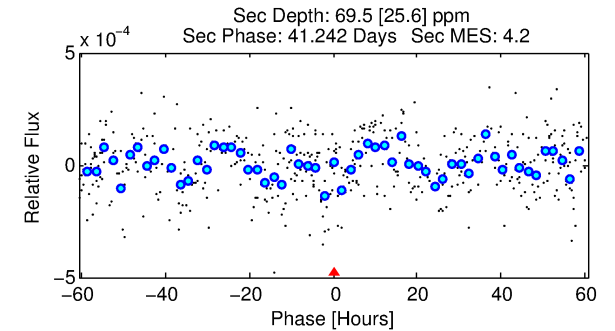
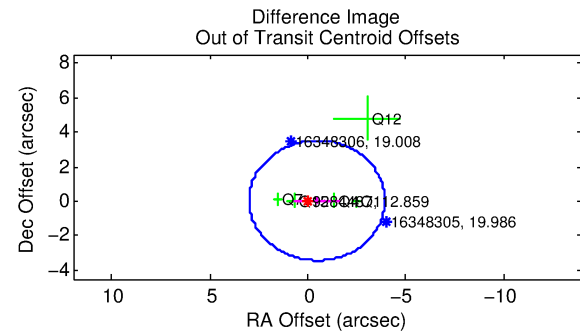
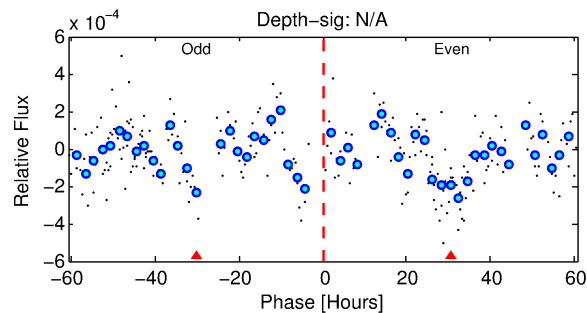
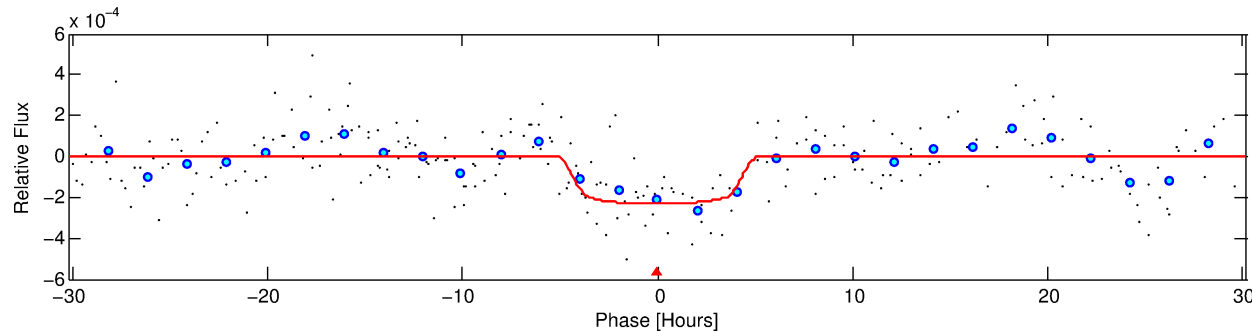
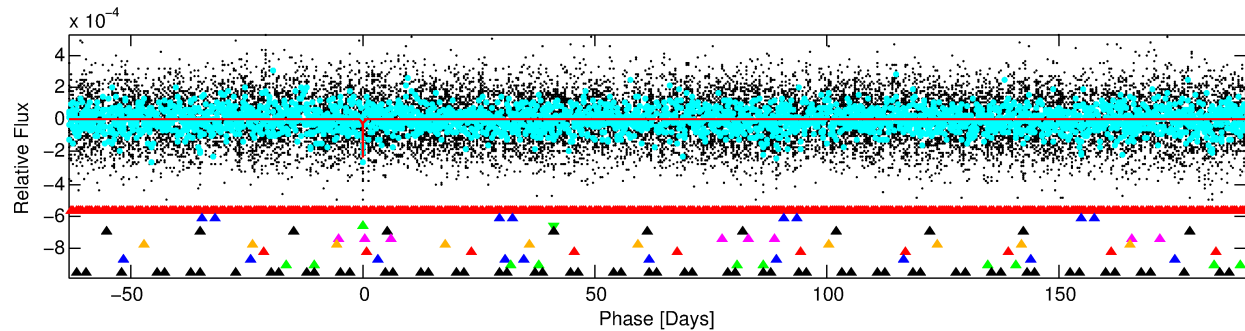
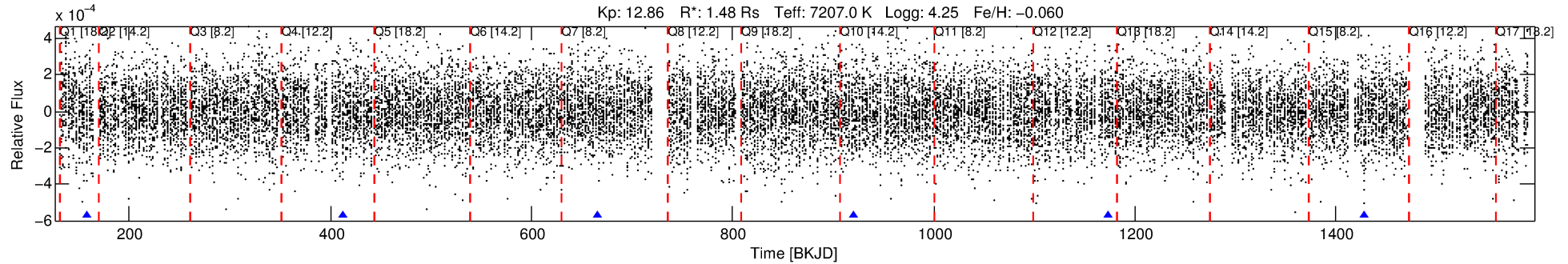
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-03

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 3 of 10 Period: 253.790 d



DV Fit Results:

Period = 253.79028 [0.00619] d
Epoch = 158.5675 [0.0176] BKJD
Rp/R* = 0.0169 [0.0019]
a/R* = 73.26 [36.51]
b = 0.94 [0.06]
Seff = 6.76 [2.82]
Teq = 411 [43] K
Rp = 2.73 [1.00] Re
a = 0.8848 [0.2473] AU
Ag = 4022.48 [2329.83] [1.73σ]
Teffp = 5063 [577] K [8.04σ]

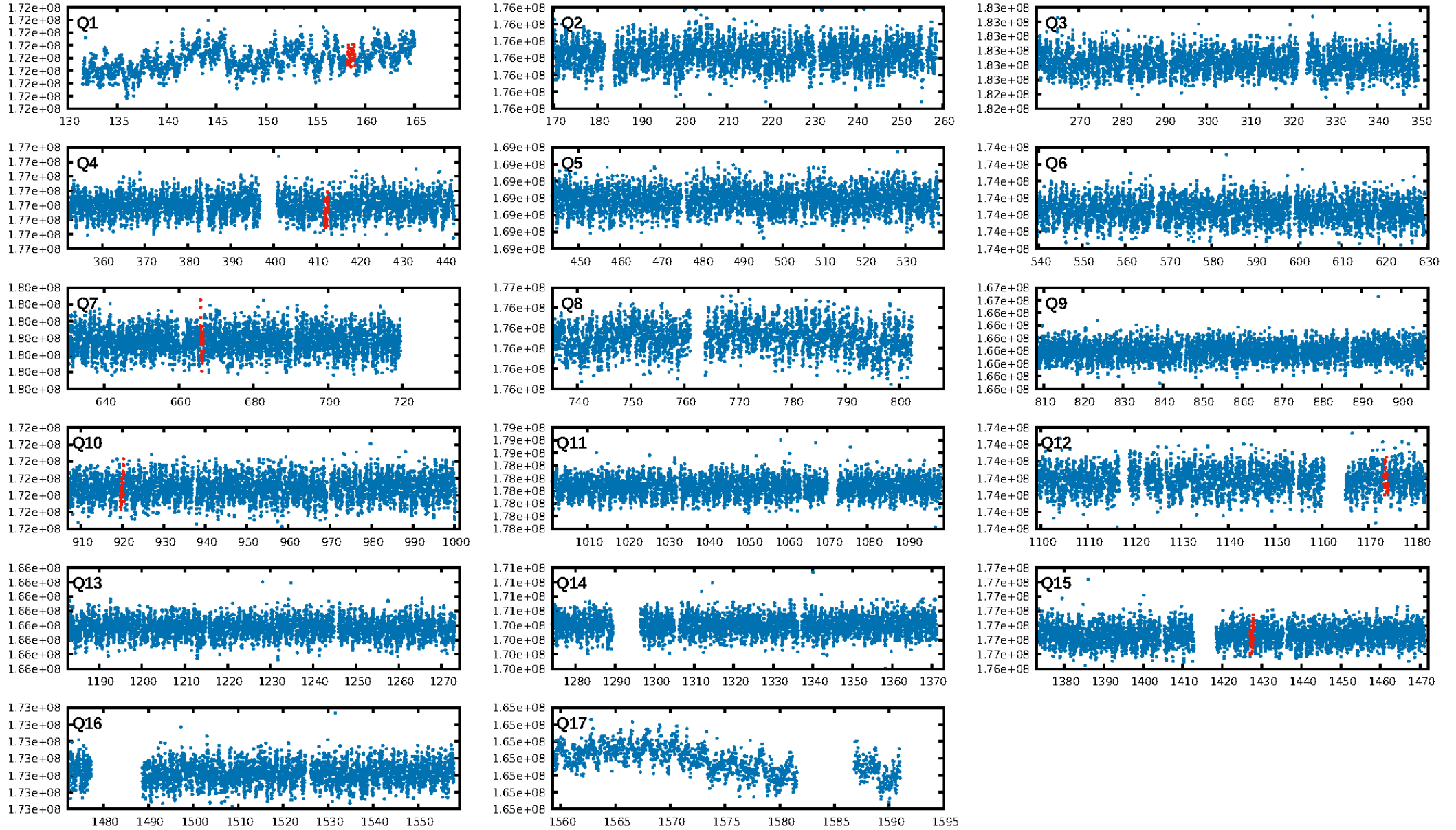
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [63.14σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 61.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.19e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -11.76
Centroid-sig: 2.4%
Centroid-so: 1.268 arcsec [1.74σ]
OotOffset-rm: 0.462 arcsec [0.40σ]
OotOffset-st: 0/2/2/1 [5]
KicOffset-rm: 0.488 arcsec [0.43σ]
KicOffset-st: 0/2/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.17 [1/6]

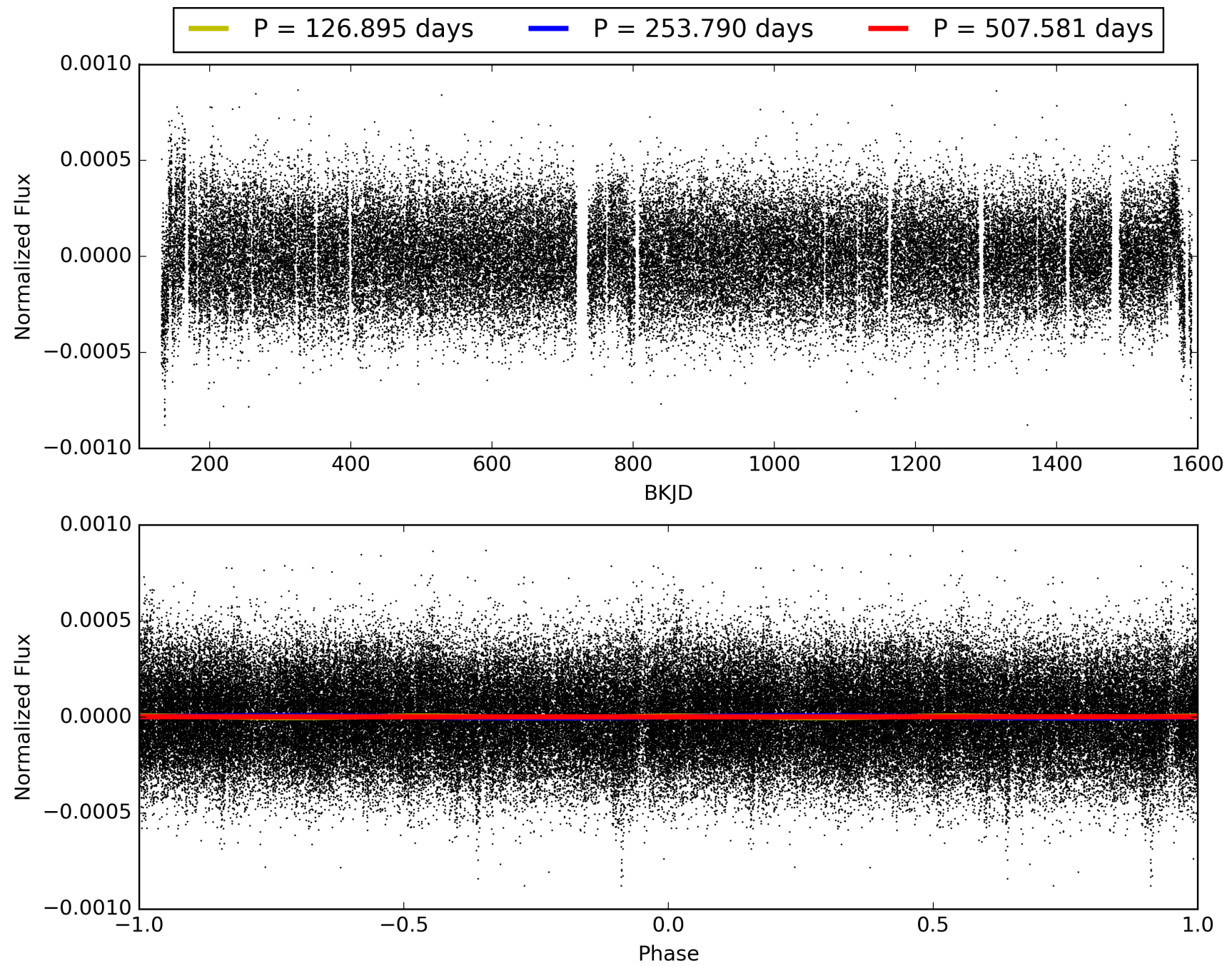
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:39:56 Z

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

TCE 009284487-03, PDC Light Curves

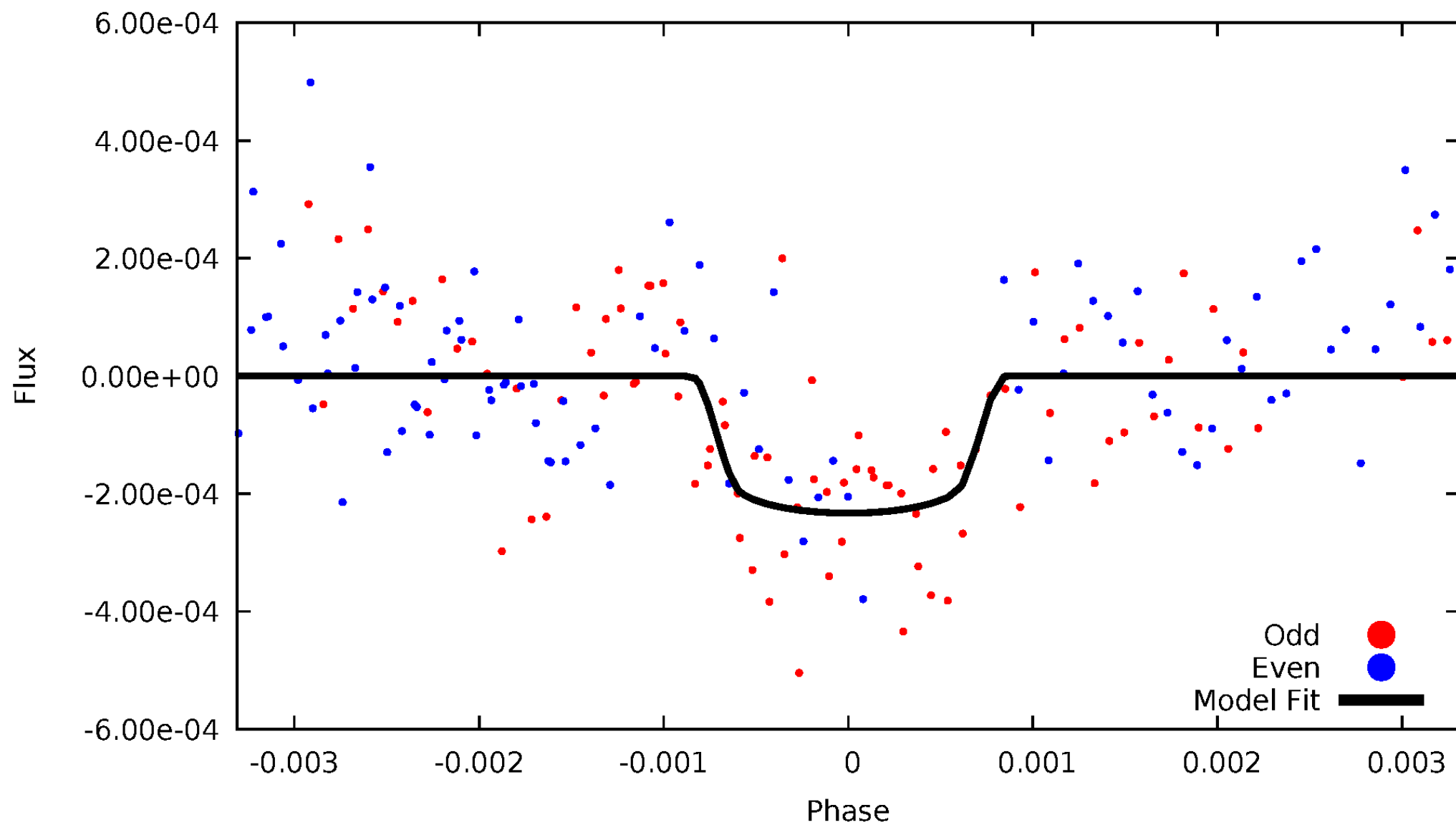


TCE 009284487-03



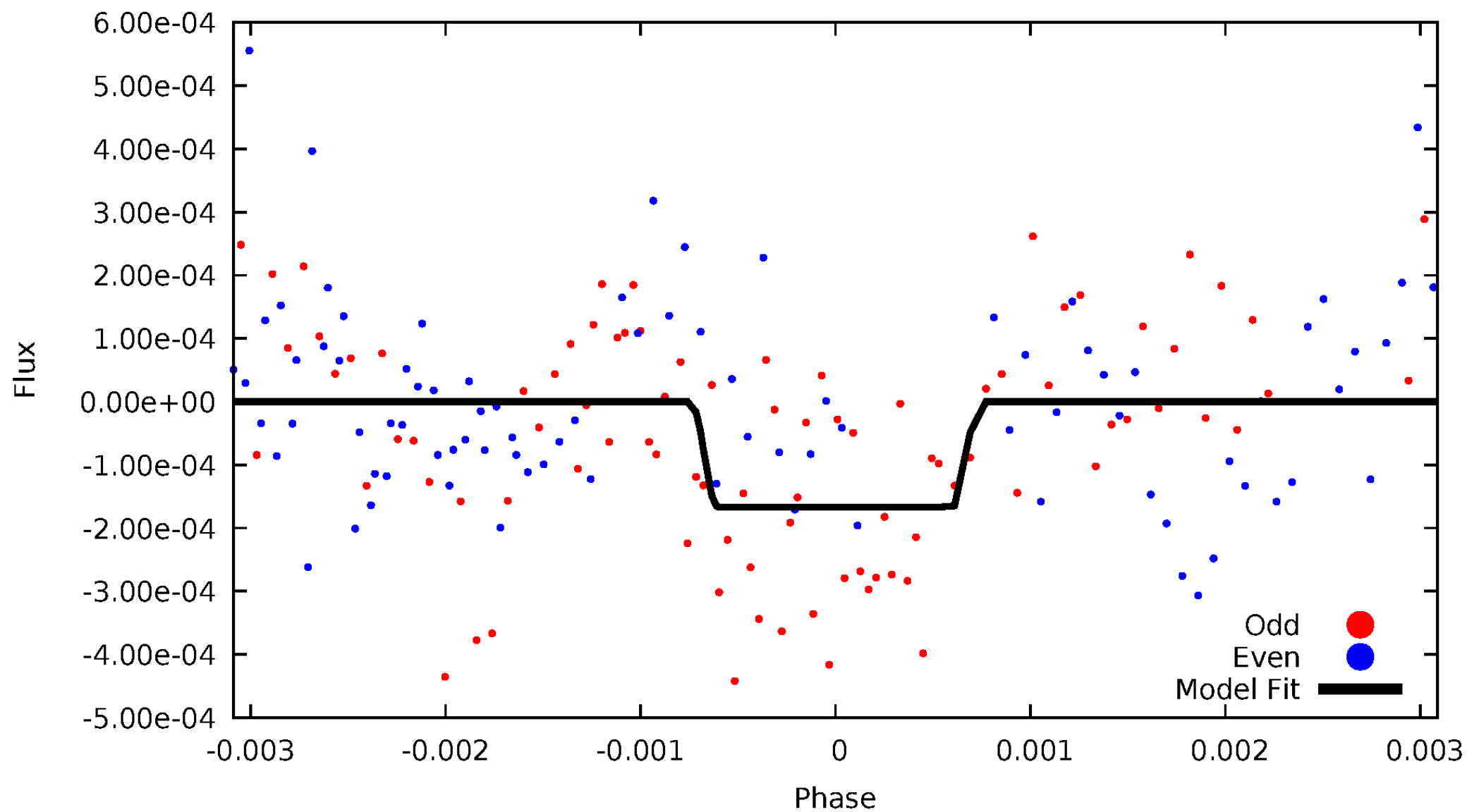
DV Odd/Even

TCE 009284487-03

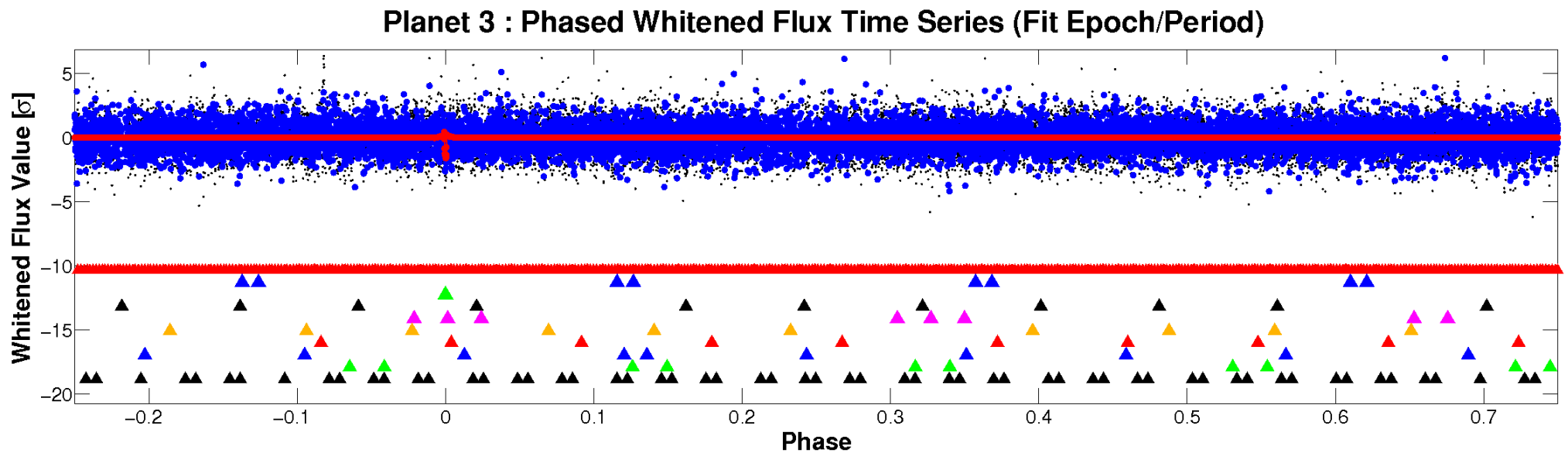
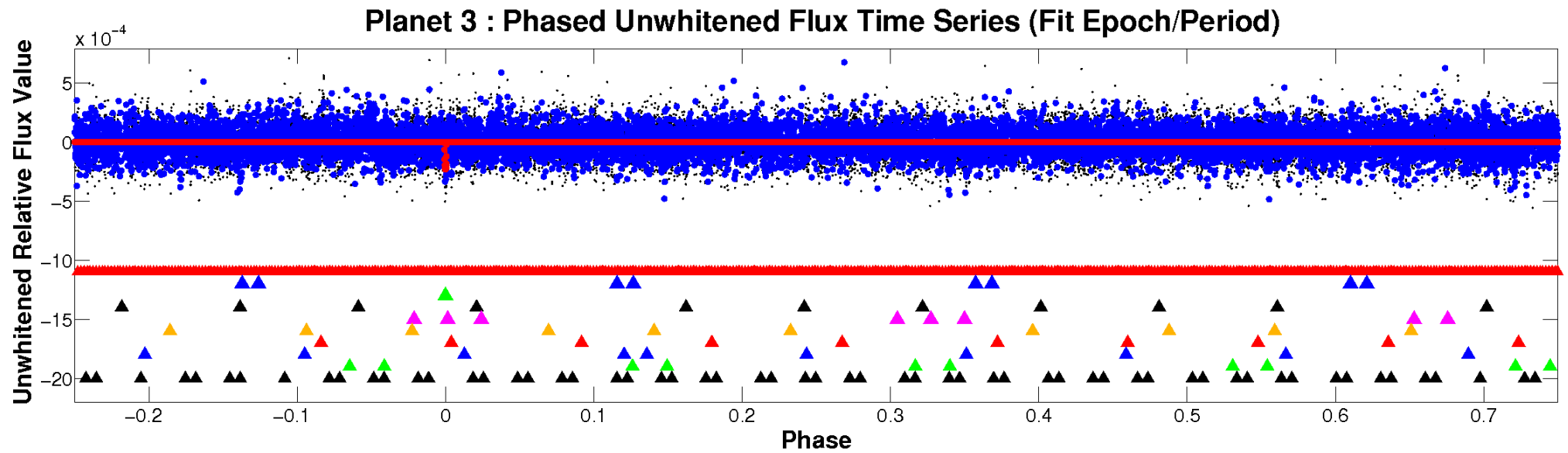


ALT Odd/Even

TCE 009284487-03

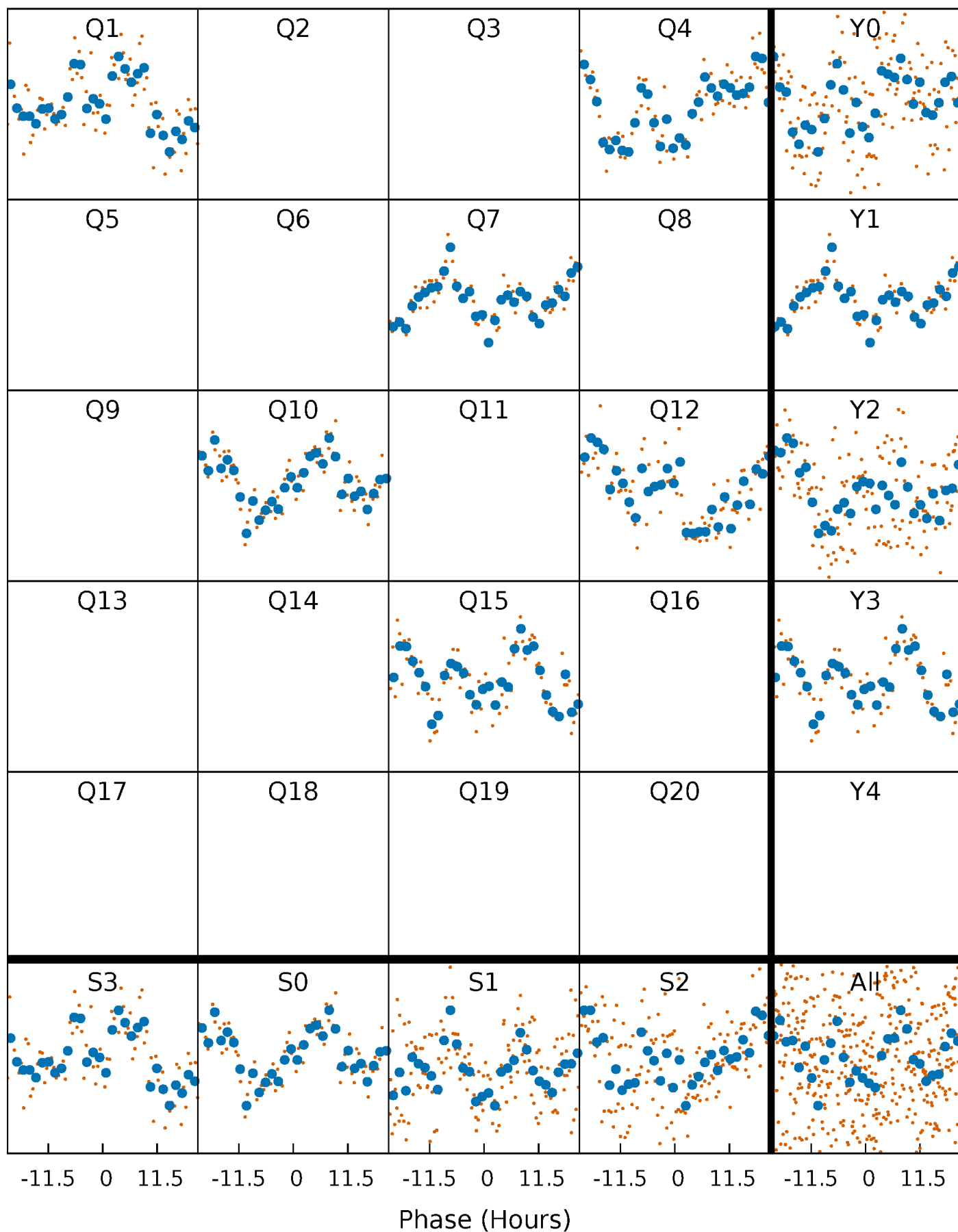


Non-Whitened Vs. Whitened Light Curve



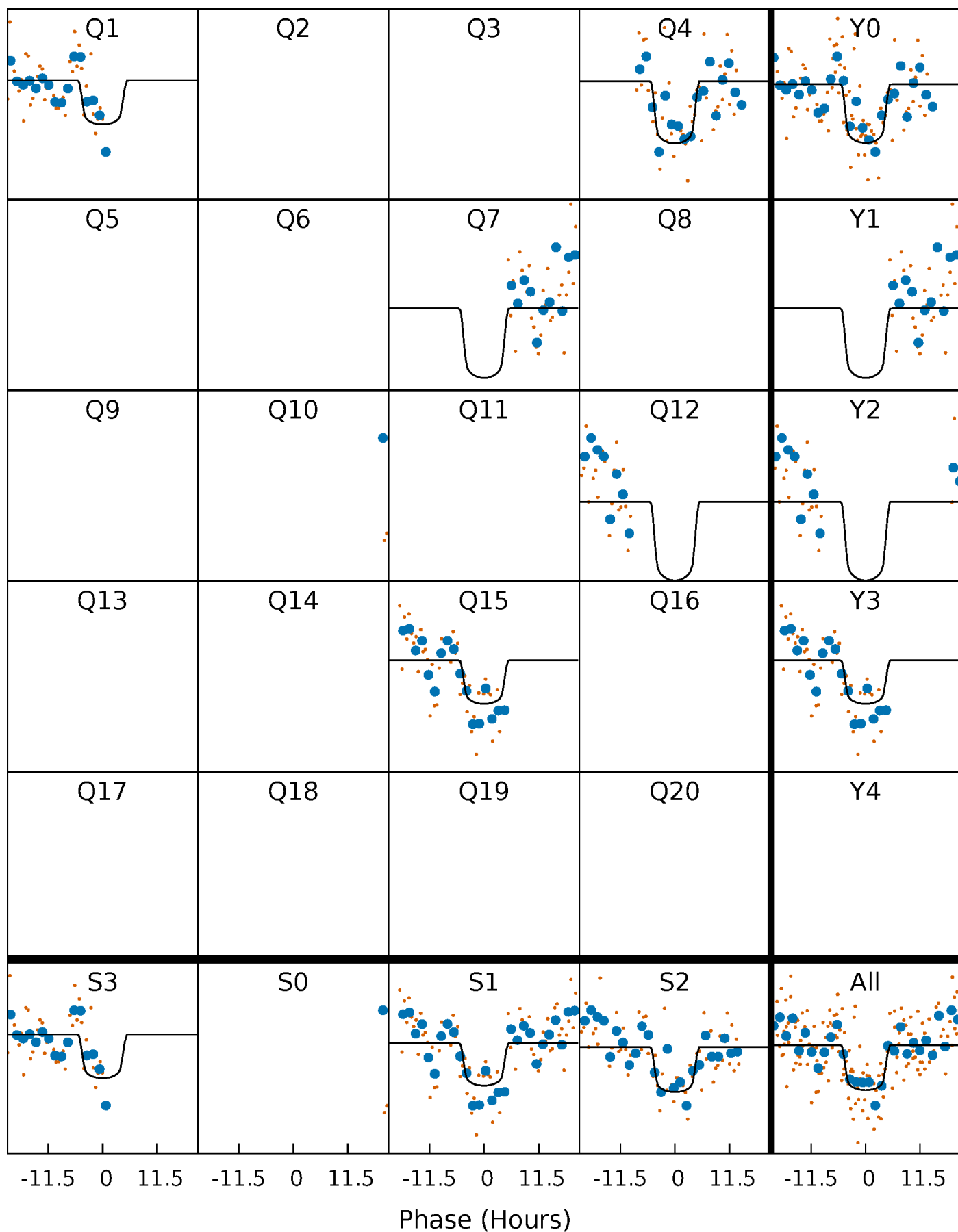
PDC Quarter-Phased Transit Curves

TCE 009284487-03 $P=253.790281$ Days $T_0=158.567538$ (BKJD)



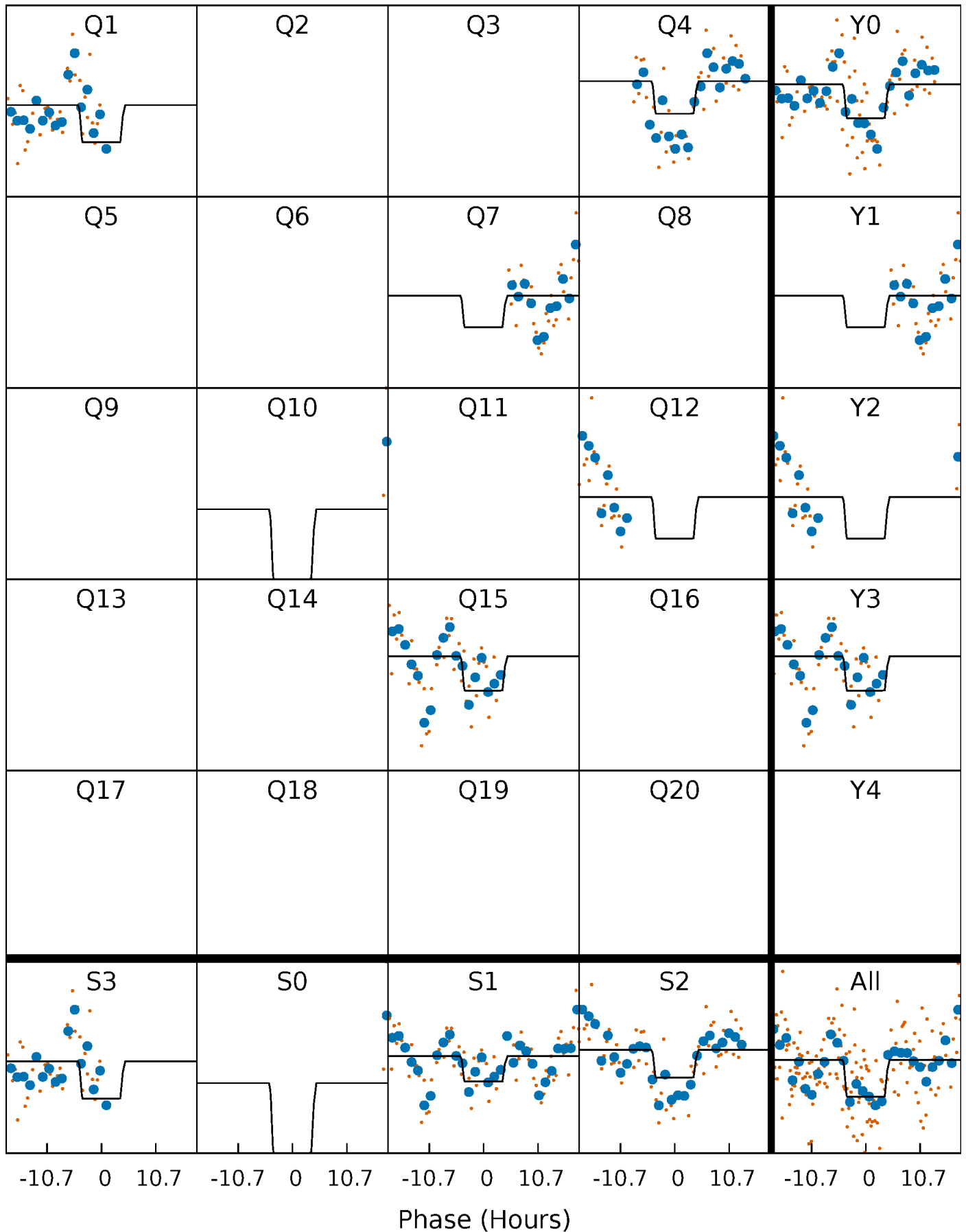
DV Quarter-Phased Transit Curves

TCE 009284487-03 $P=253.790281$ Days $T_0=158.567538$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

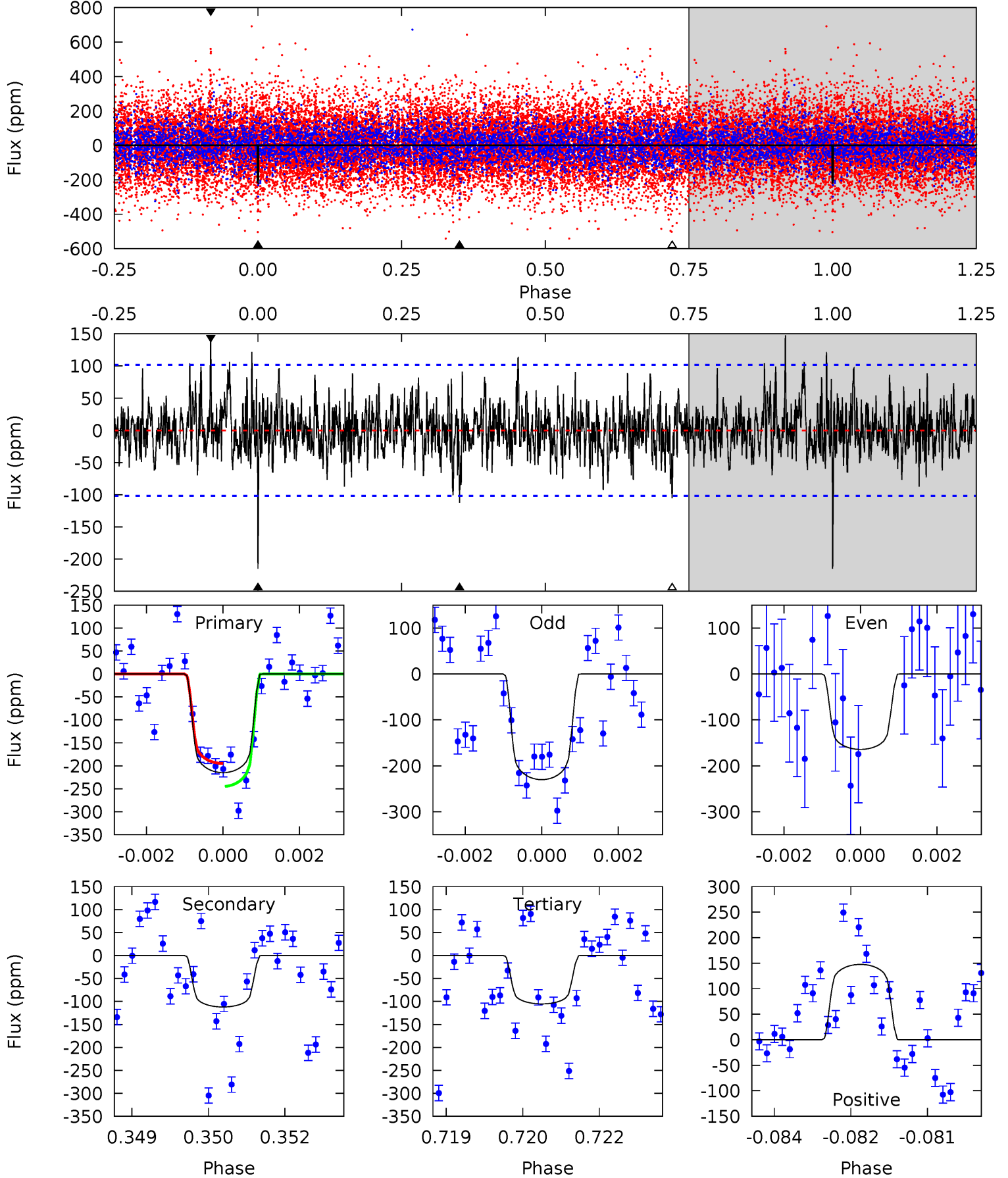
TCE 009284487-03 $P=253.798438$ Days $T_0=158.558796$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-03, P = 253.790281 Days, E = 158.567538 Days

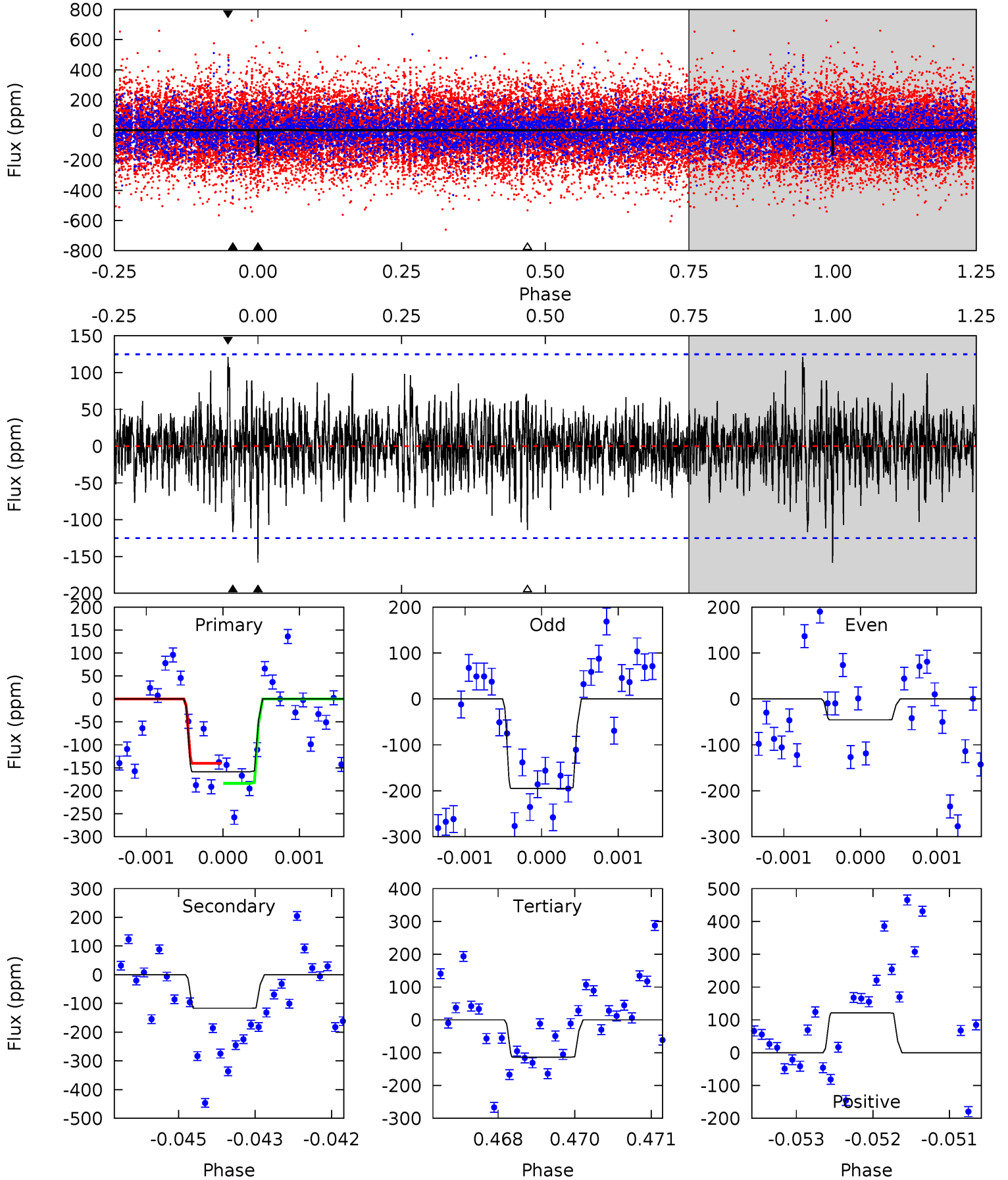
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	5.89	5.54	7.76	5.35	3.13	1.66	5.76	3.54	0.35	-1.87	1.51	1.16	0.41	1.29



Alt Model-Shift Uniqueness Test

009284487-03, P = 253.798438 Days, E = 158.558796 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.82	5.03	4.90	5.22	5.38	3.18	1.30	1.92	1.60	0.13	-0.20	2.80	1.20	0.43	0.92



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-112±19	$2.81^{+0.52}_{-0.43}$	583^{+43}_{-34}	5655^{+399}_{-398}	6048^{+2333}_{-1844}
Alt.	-117±23	$2.16^{+0.48}_{-0.38}$	582^{+49}_{-31}	6485^{+743}_{-562}	10418^{+5675}_{-3652}

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 $A_{obs} \gg 1.0$

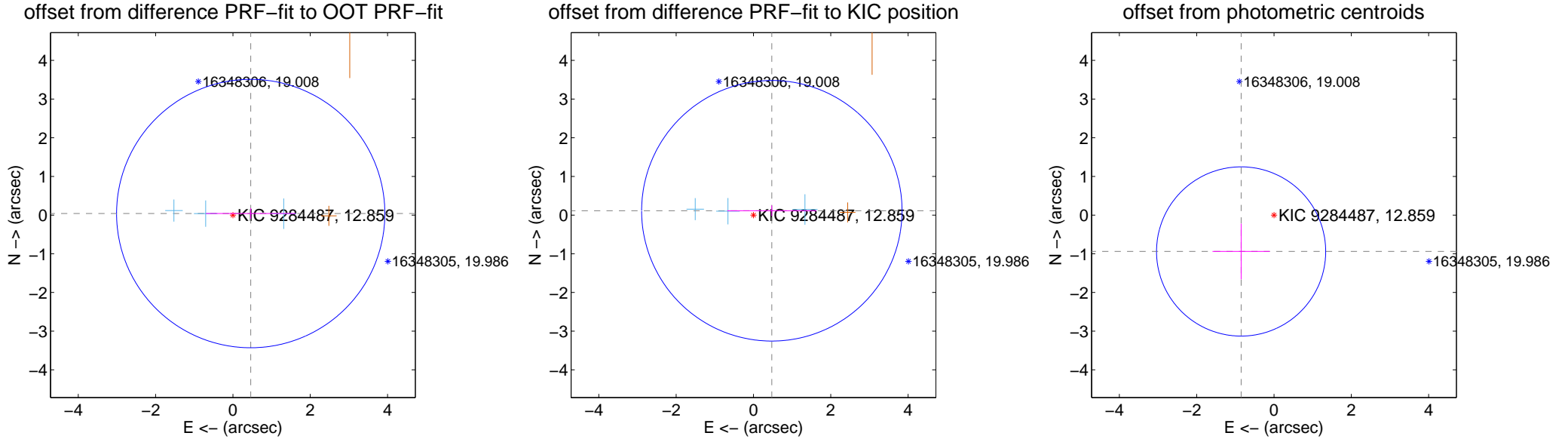
DV Centroid Data

Supplemental centroid analysis for 009284487-03. Kepler magnitude: 12.86. Transit SNR 9.16

There are 3 quarters with good PRF difference image offsets

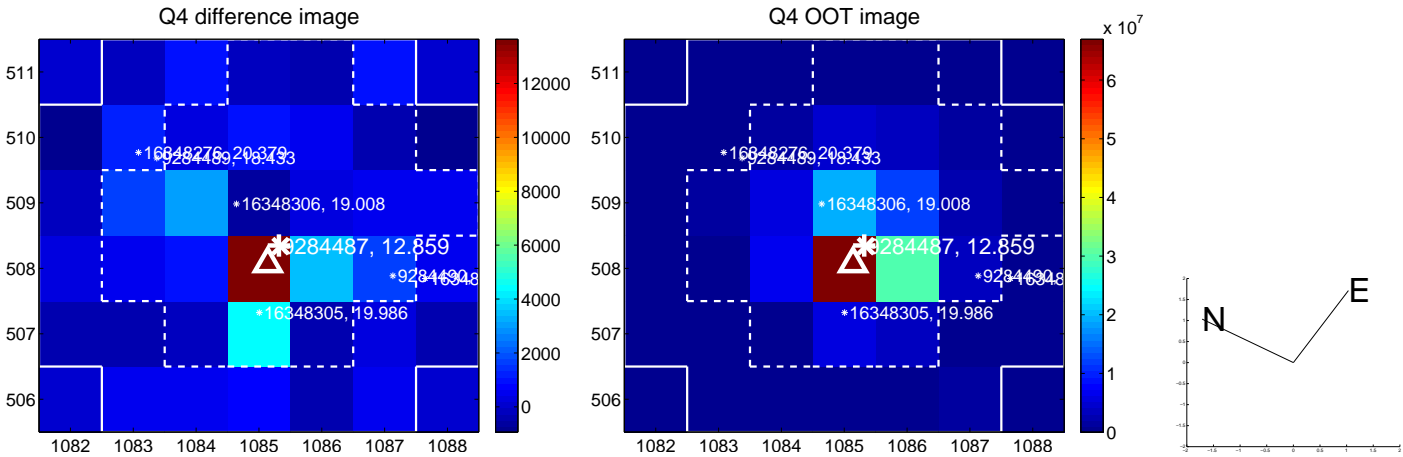
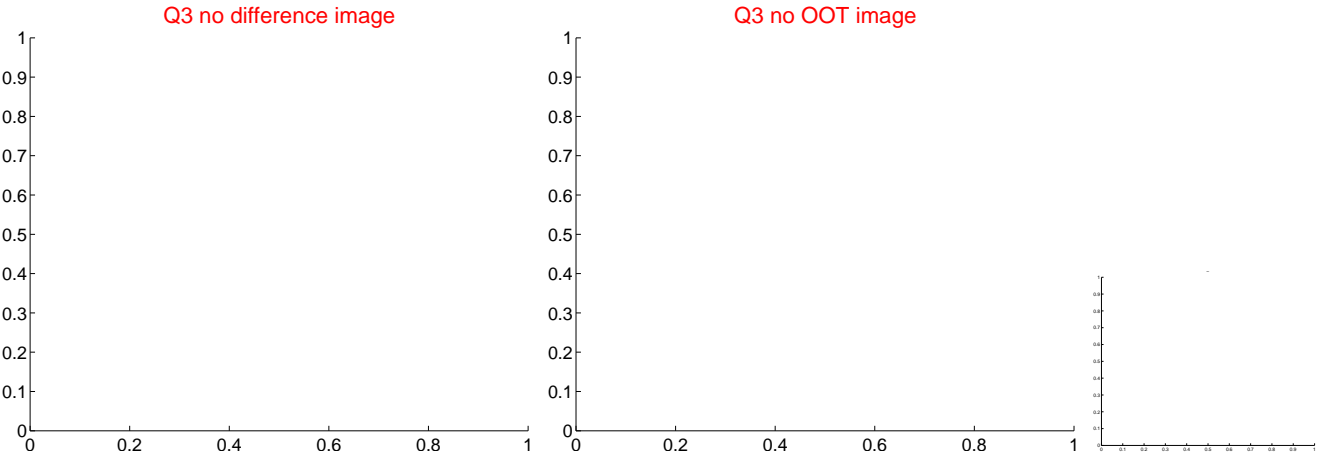
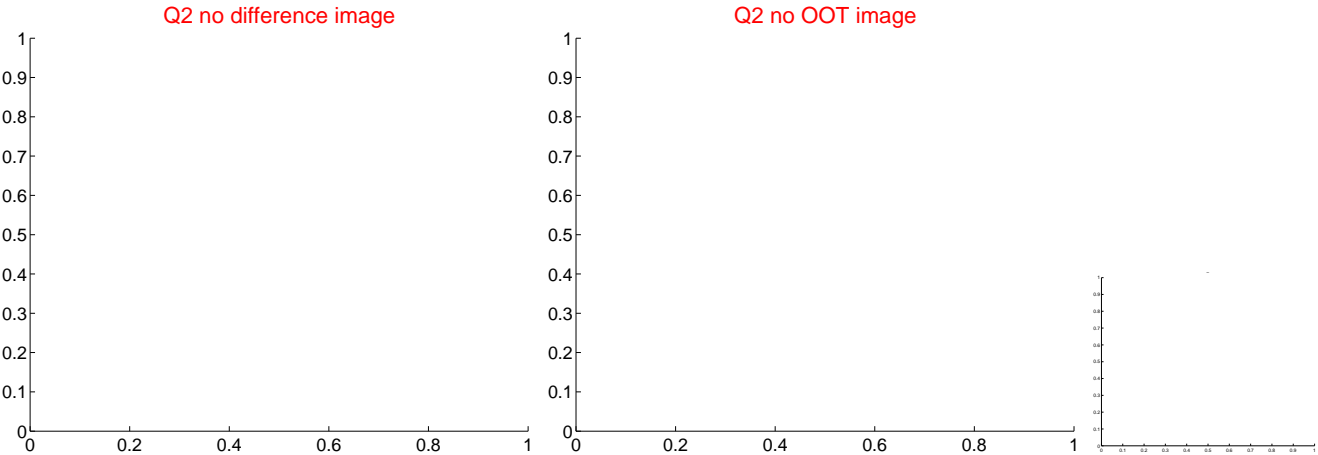
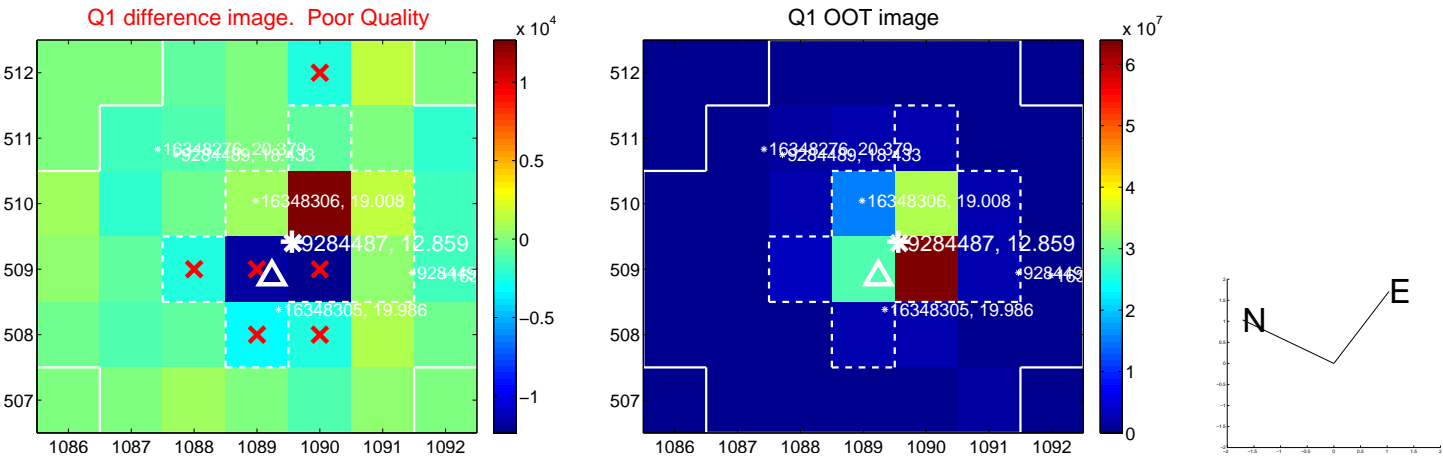
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.462 ± 1.156	0.40	-0.460 ± 1.161	0.040 ± 0.140
PRF-fit source offset from KIC position	0.488 ± 1.123	0.43	-0.475 ± 1.153	0.112 ± 0.138
photometric centroid source offset	1.27 ± 0.73	1.74	0.85 ± 0.74	-0.94 ± 0.72



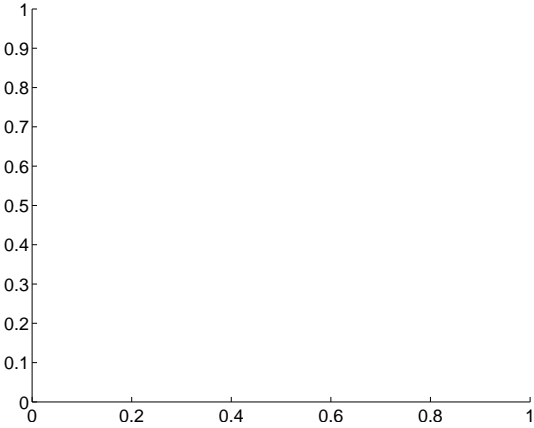
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

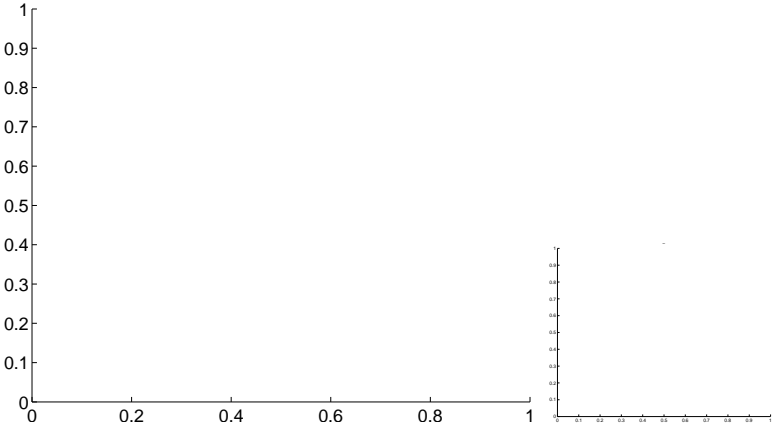


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

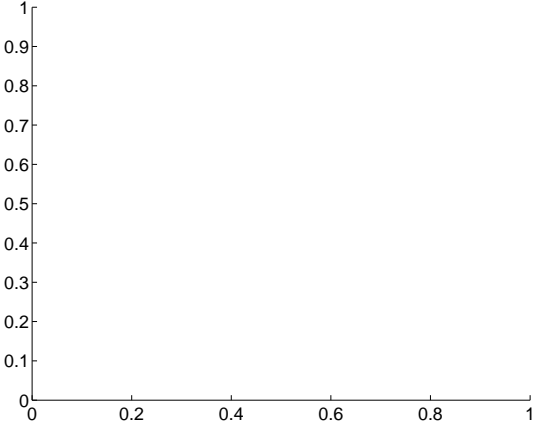
Q5 no difference image



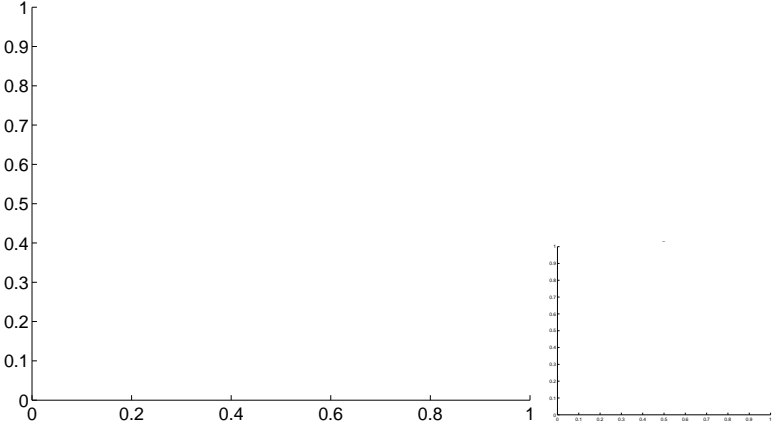
Q5 no OOT image



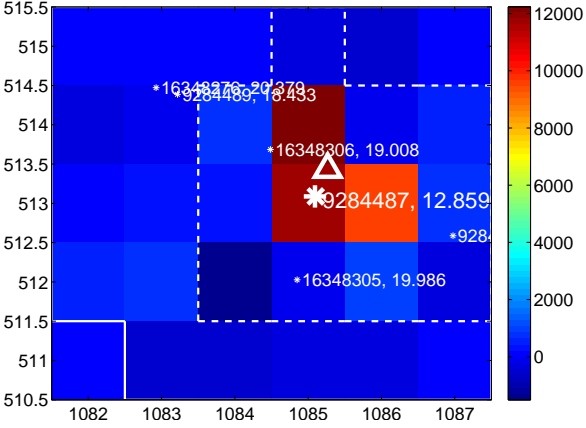
Q6 no difference image



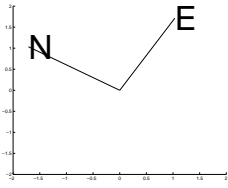
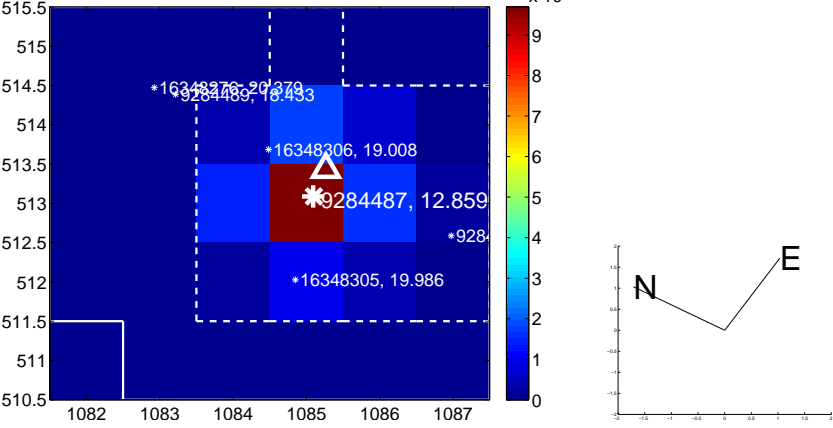
Q6 no OOT image



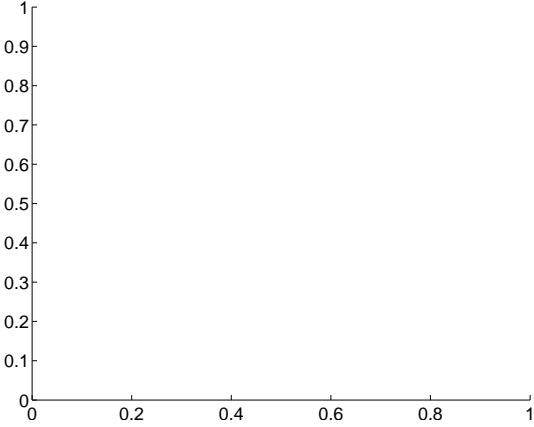
Q7 difference image



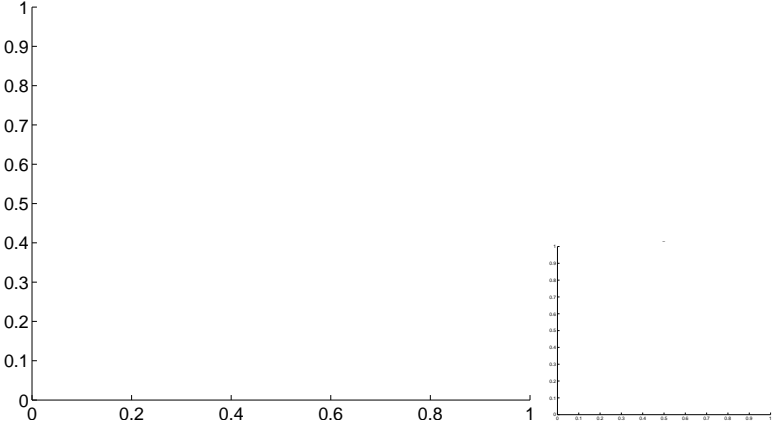
Q7 OOT image



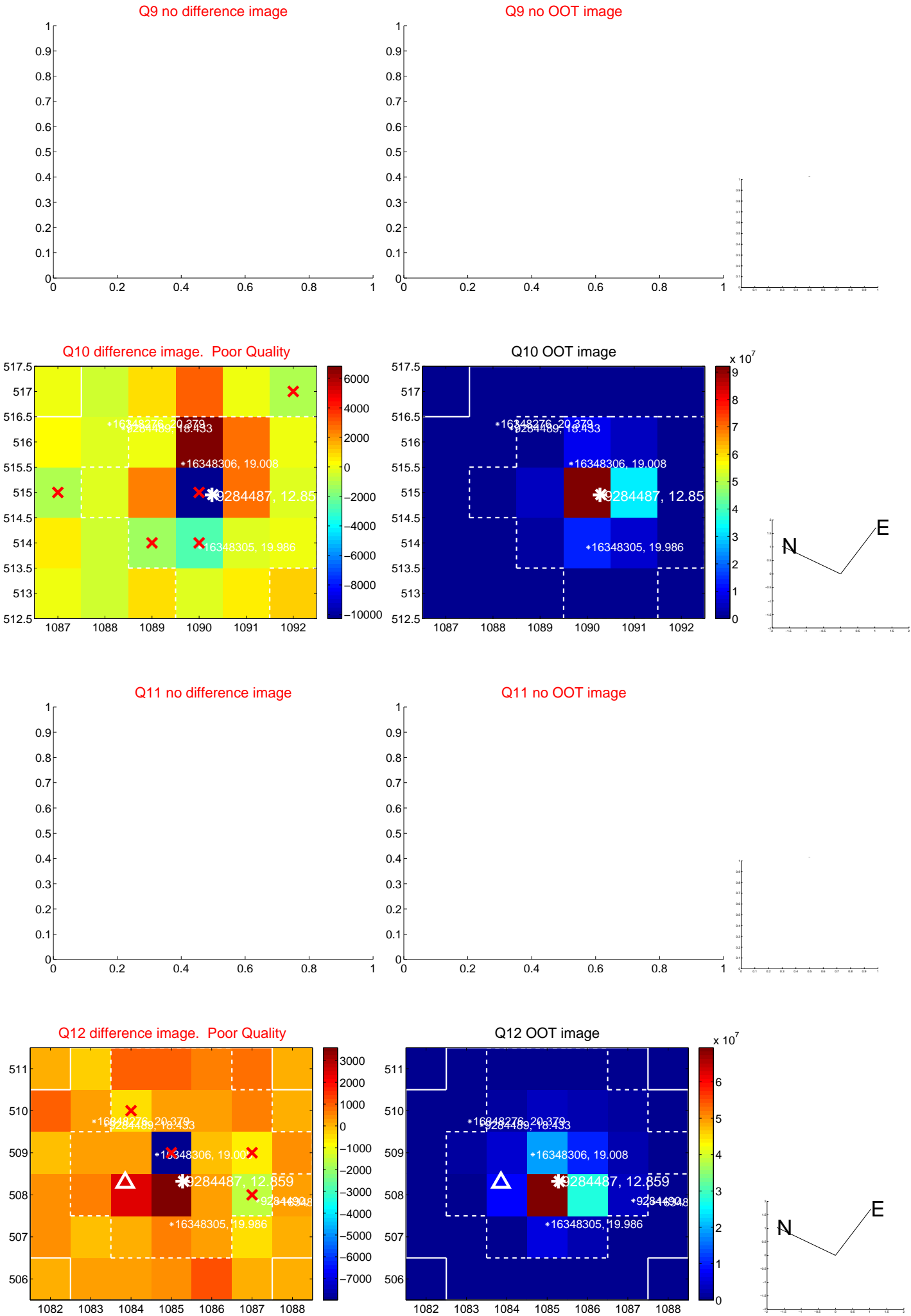
Q8 no difference image



Q8 no OOT image



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



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

Q13 no difference image



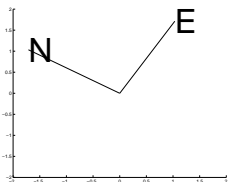
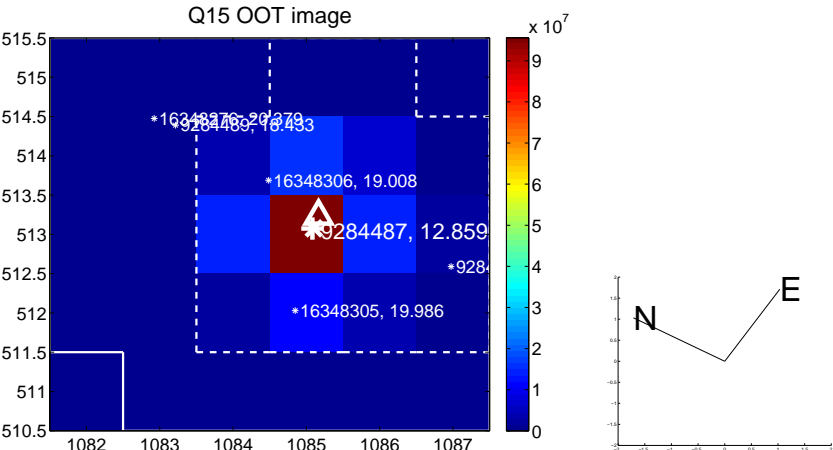
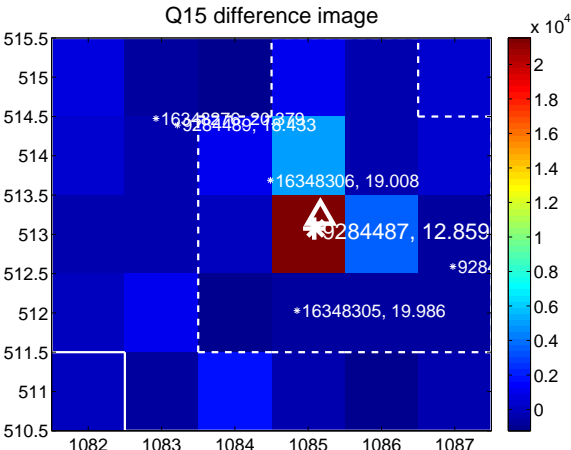
Q13 no OOT image



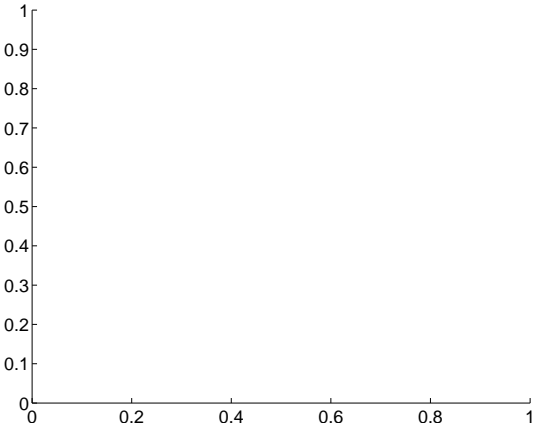
Q14 no difference image



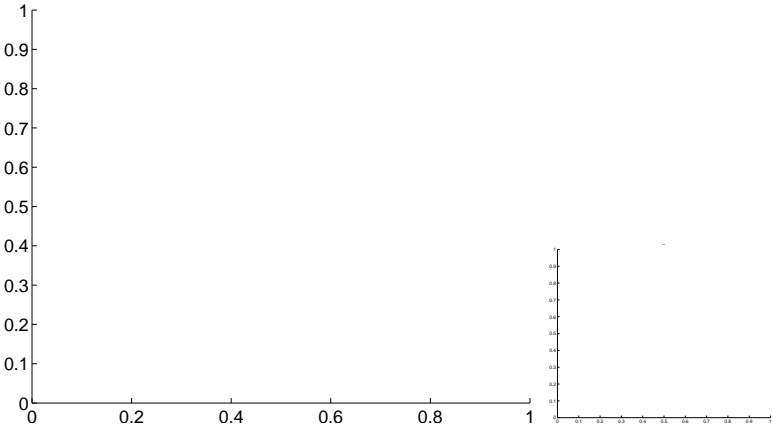
Q14 no OOT image



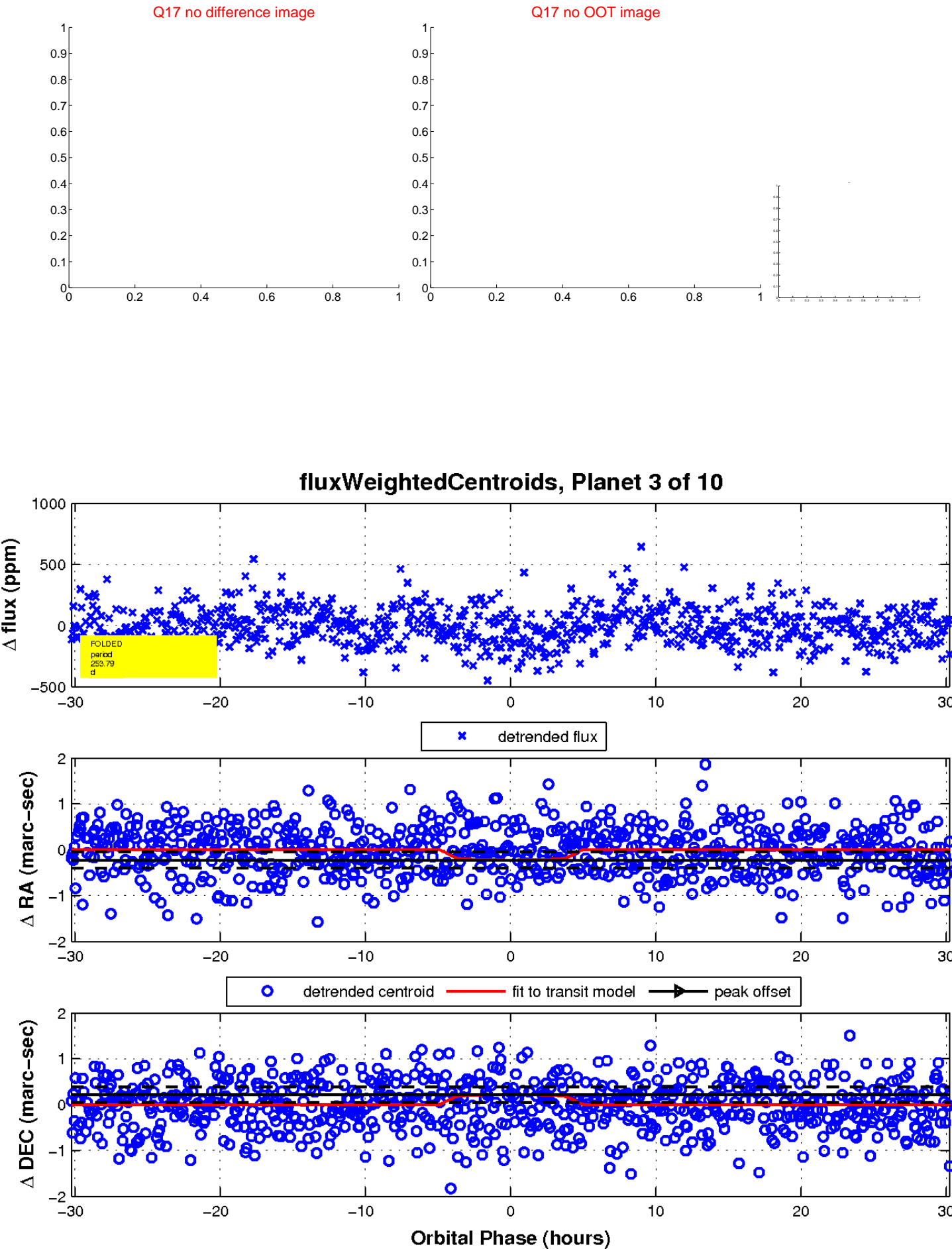
Q16 no difference image



Q16 no OOT image

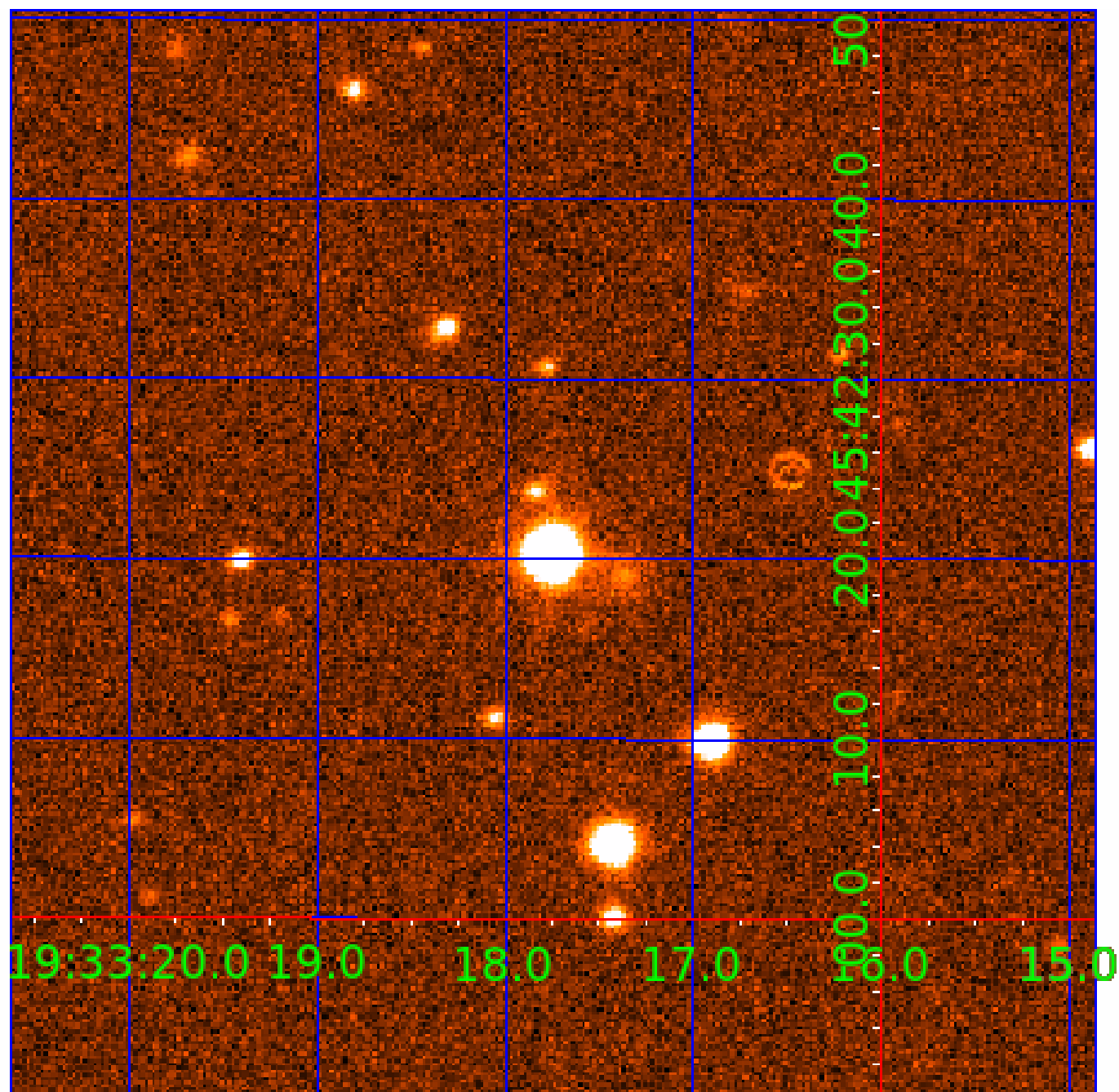


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

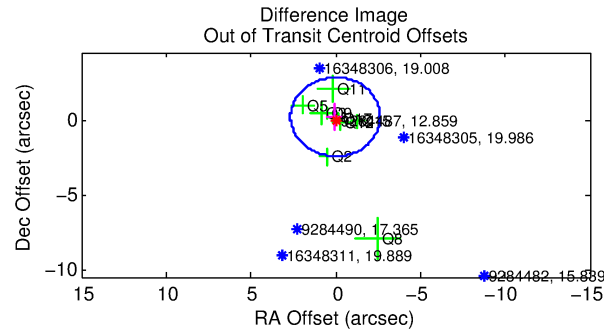
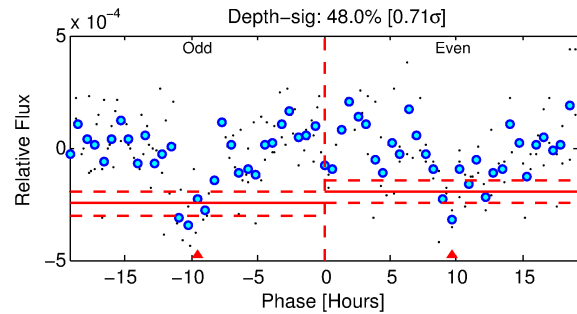
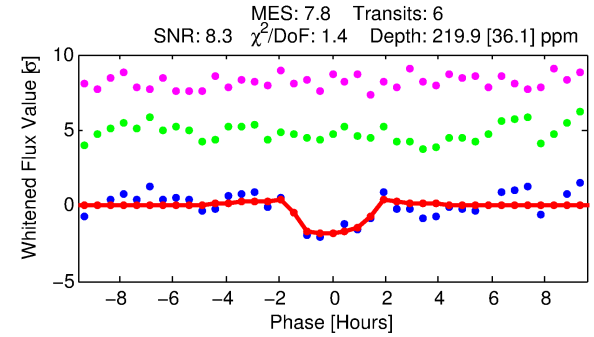
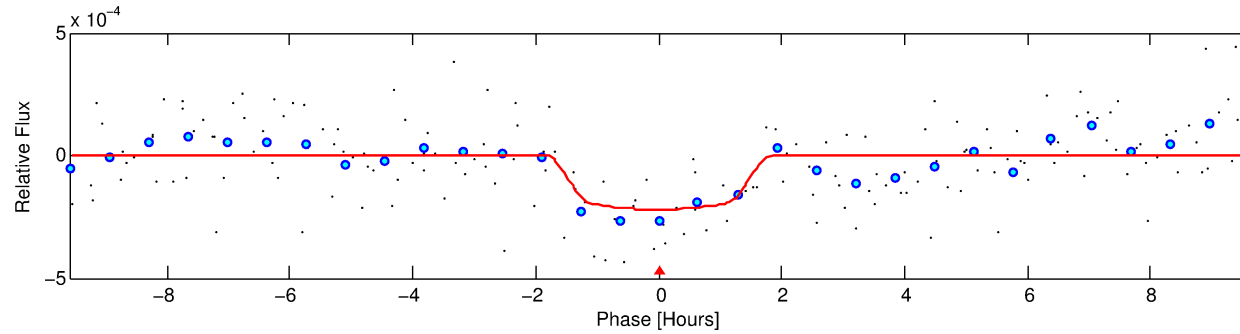
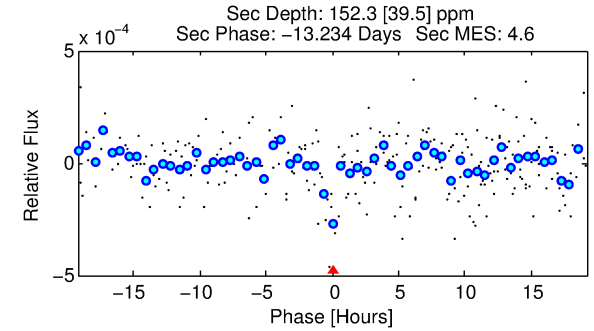
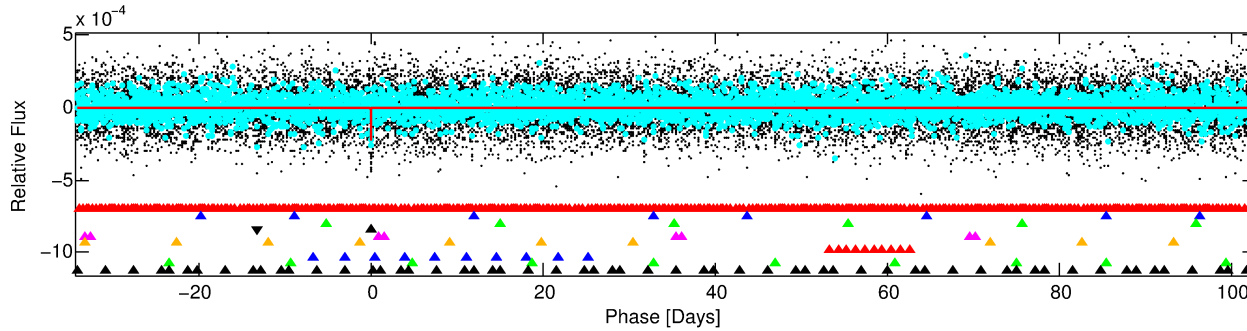
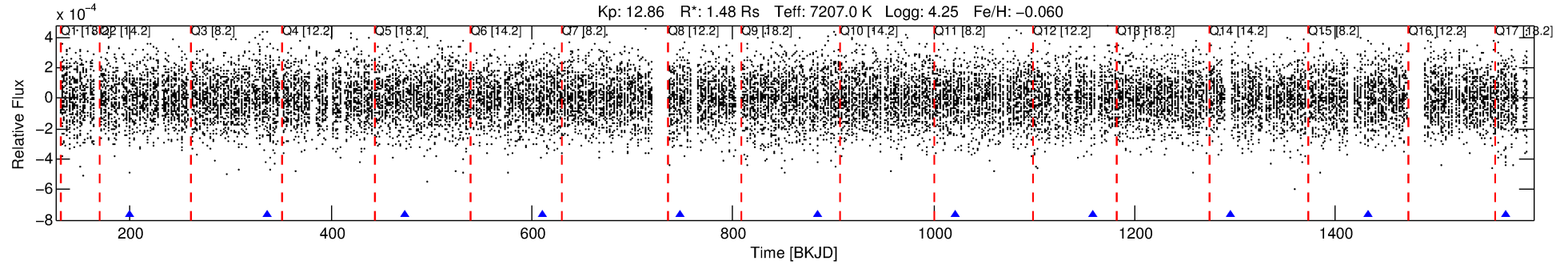
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-04

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 4 of 10 Period: 137.012 d



DV Fit Results:

Period = 137.01241 [0.00125] d
Epoch = 199.7303 [0.0096] BKJD
Rp/R* = 0.0154 [0.0107]
a/R* = 176.35 [745.03]
b = 0.86 [1.29]
Seff = 15.38 [6.42]
Teq = 505 [53] K
Rp = 2.48 [1.93] Re
a = 0.5866 [0.1639] AU
Ag = 4672.01 [6829.31] [0.68 σ]
Teffp = 6455 [2287] K [2.60 σ]

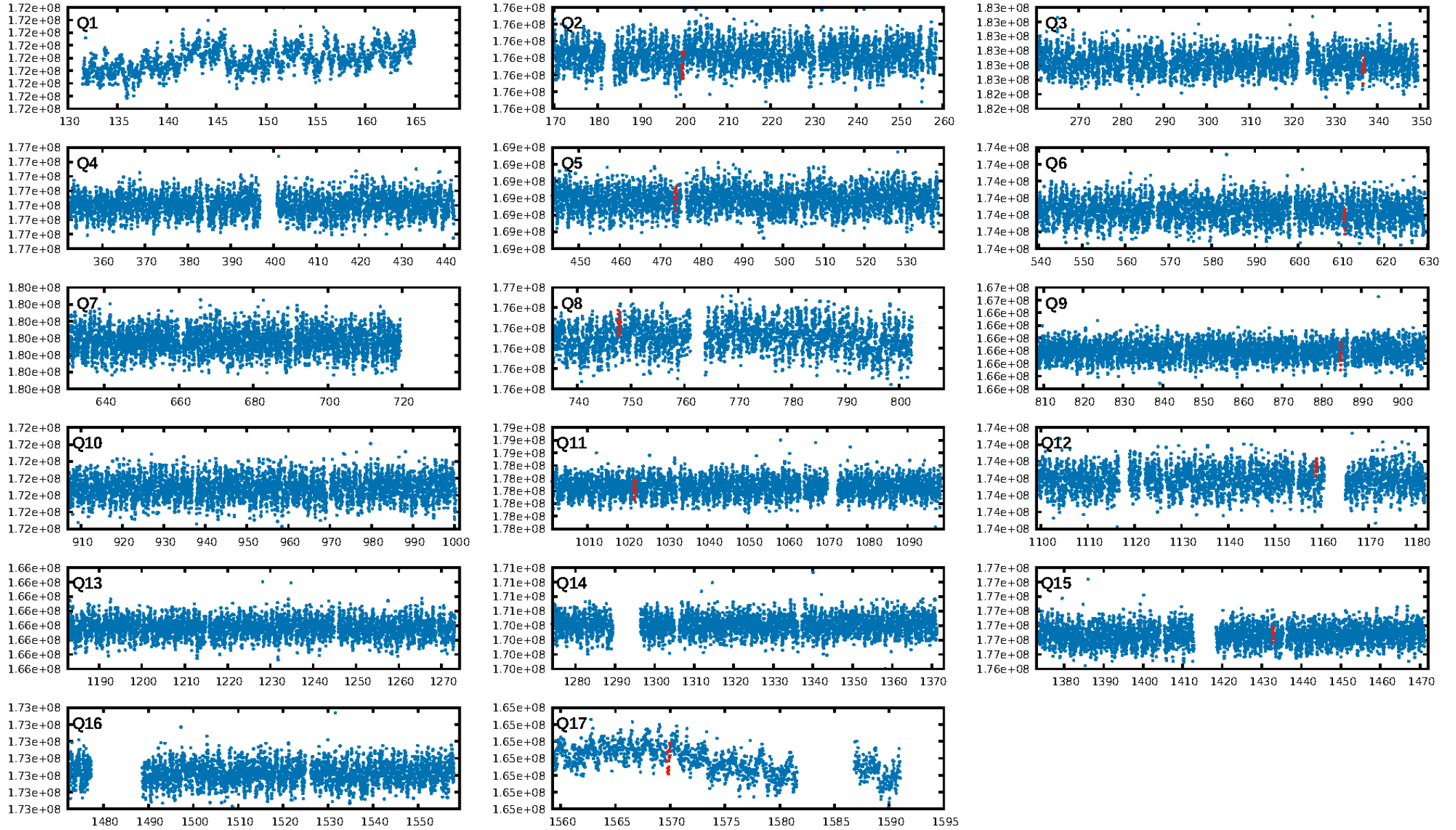
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [609.39 σ]
LongPeriod-sig: 100.0% [3.99 σ]
ModelChiSquare2-sig: 61.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.82e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -2.586
Centroid-sig: 33.4%
Centroid-so: 0.777 arcsec [0.85 σ]
OotOffset-rm: 0.191 arcsec [0.22 σ]
KicOffset-rm: 0.290 arcsec [0.25 σ]
OotOffset-st: 1/3/2/3 [9]
KicOffset-st: 1/3/2/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.70 [7/10]

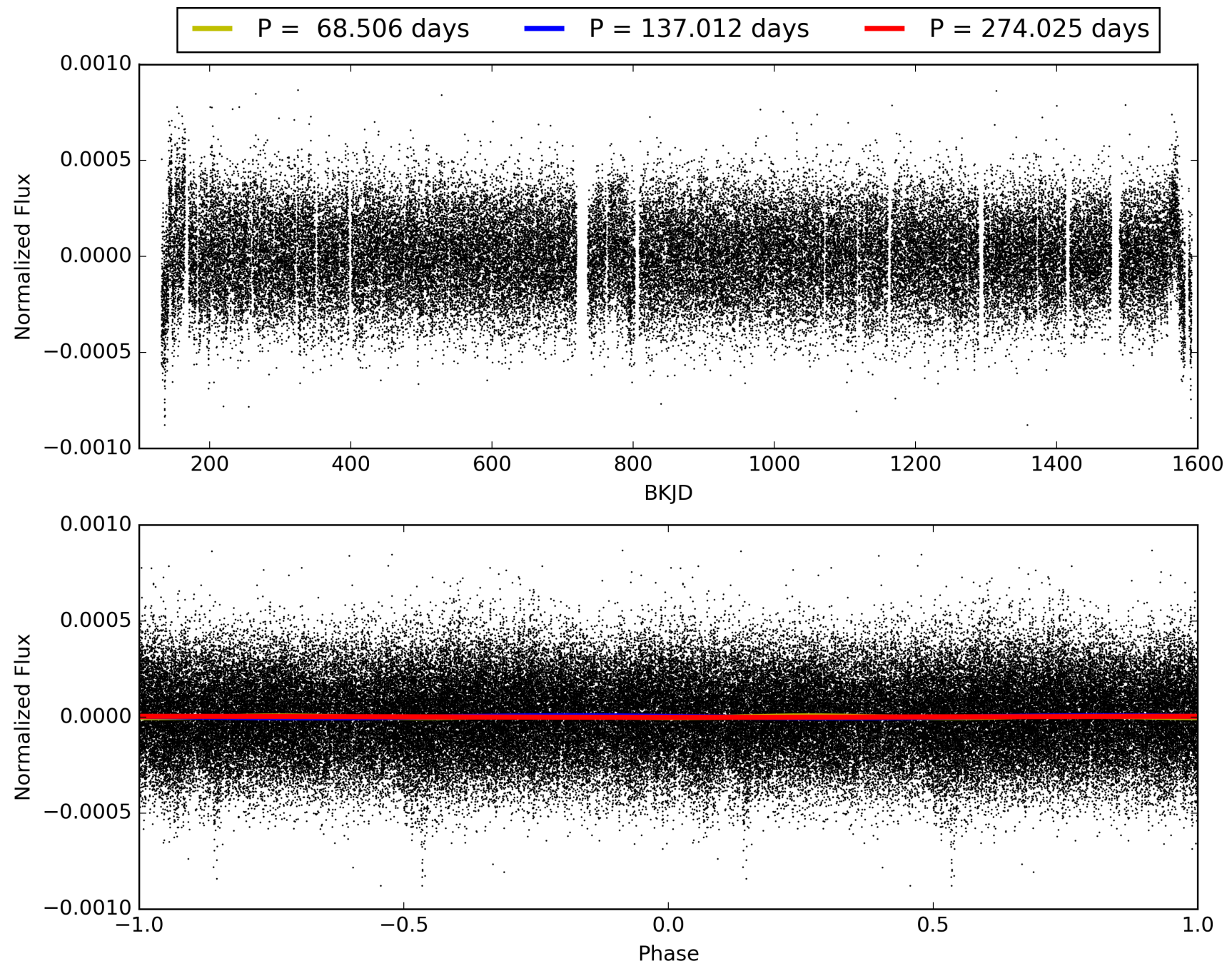
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:40:02 Z

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

TCE 009284487-04, PDC Light Curves

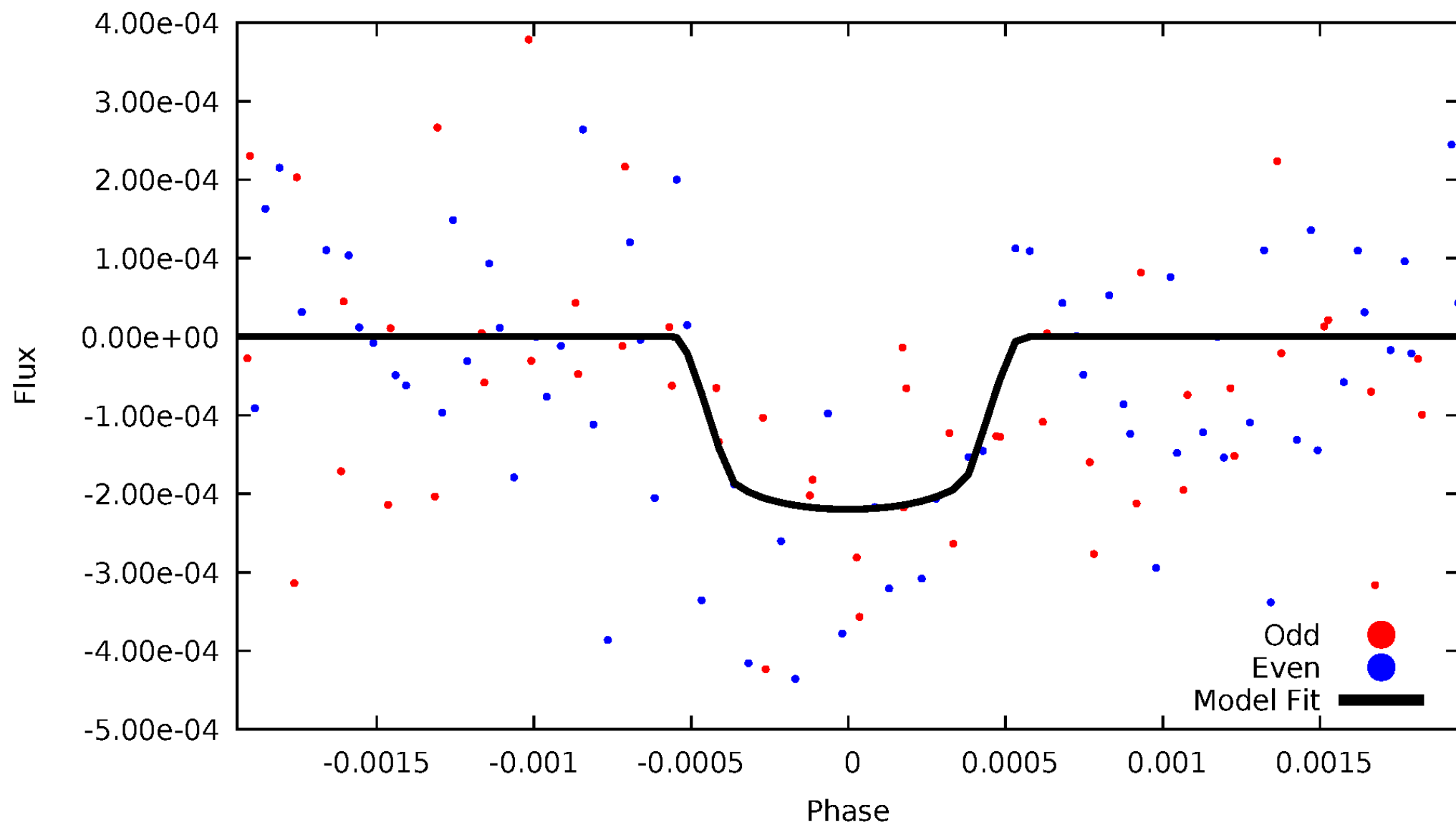


TCE 009284487-04



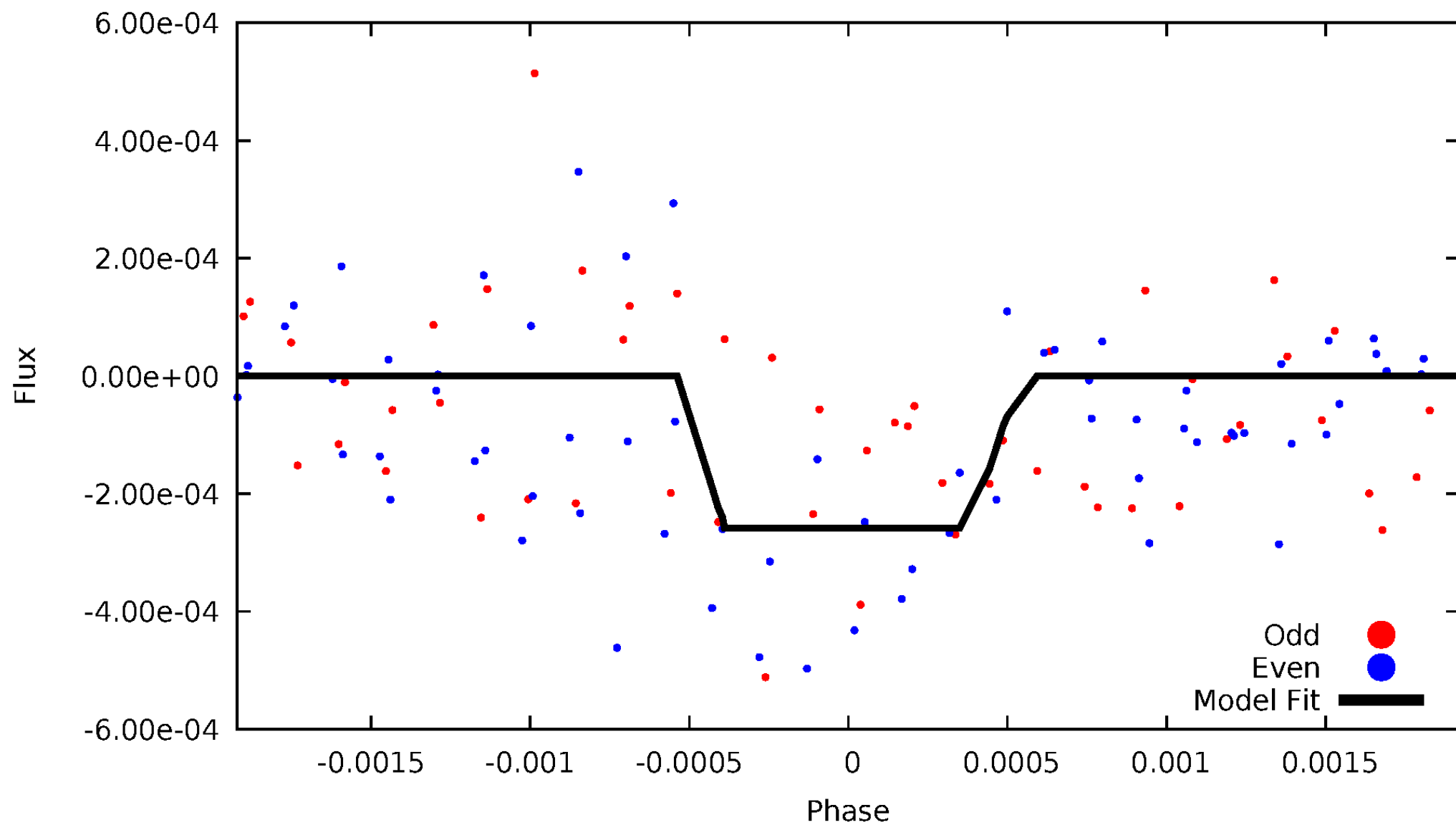
DV Odd/Even

TCE 009284487-04



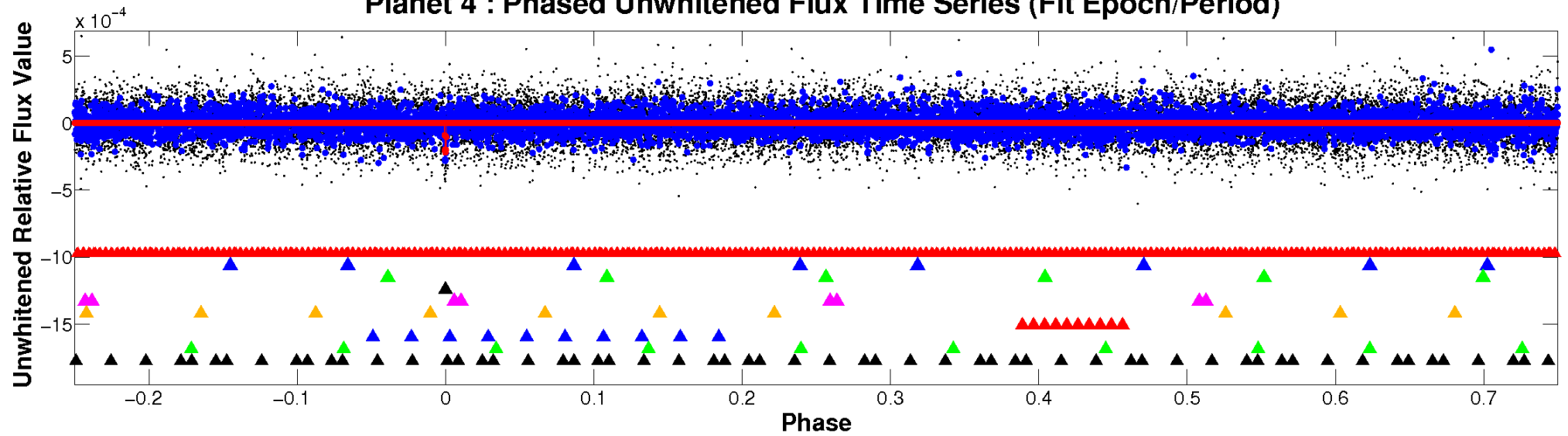
ALT Odd/Even

TCE 009284487-04

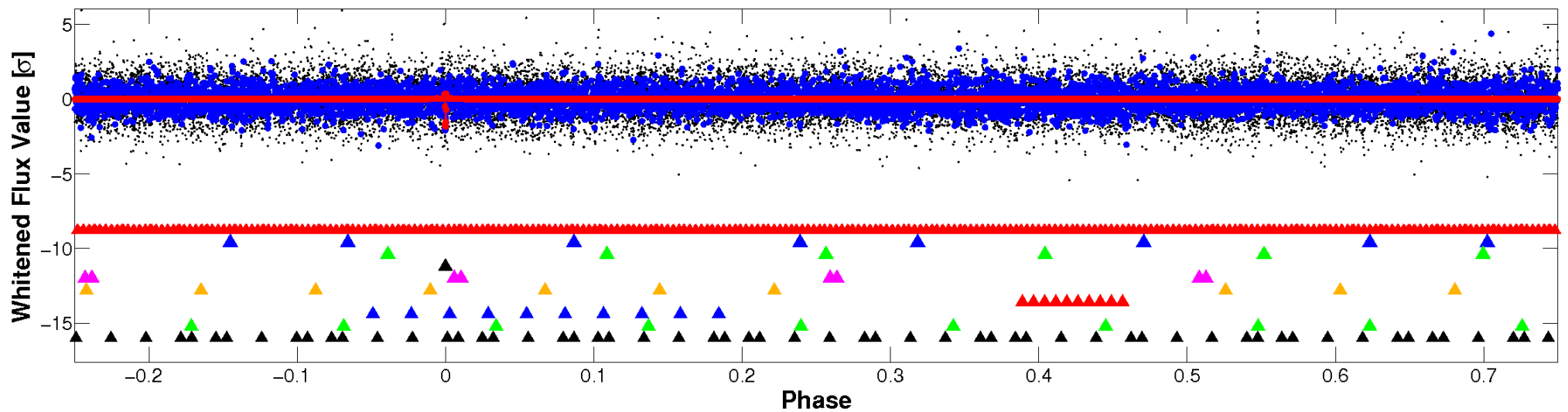


Non-Whitened Vs. Whitened Light Curve

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

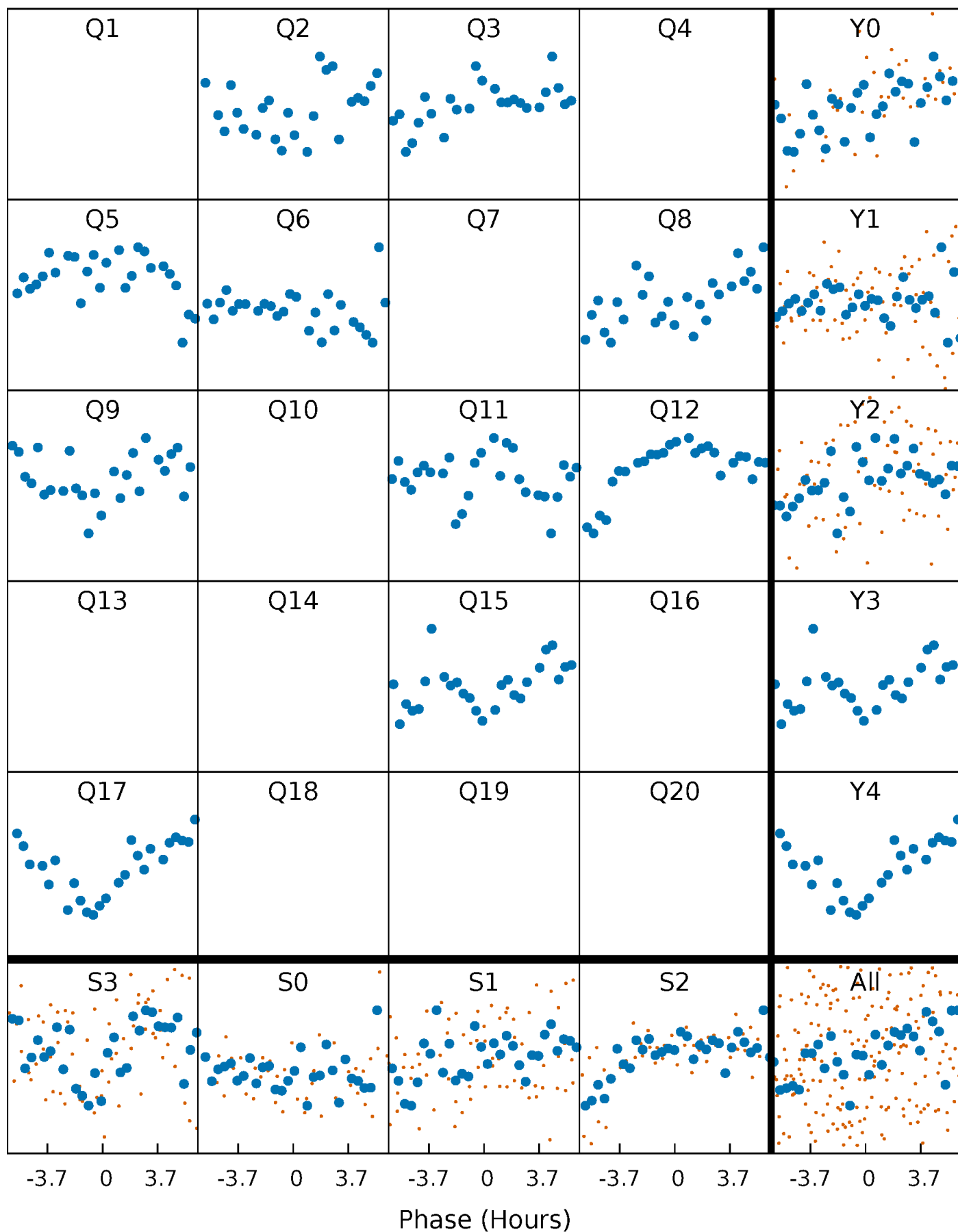


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



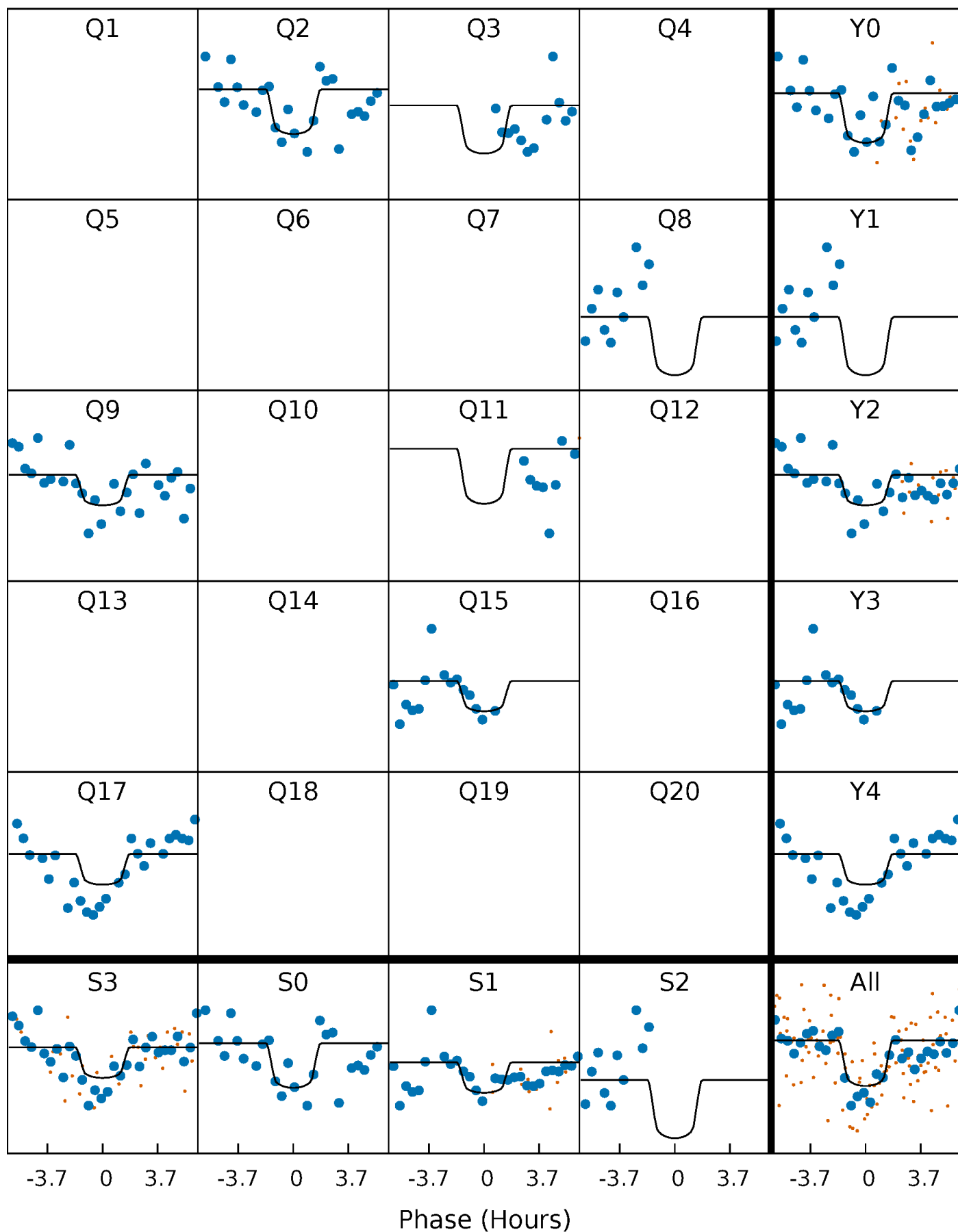
PDC Quarter-Phased Transit Curves

TCE 009284487-04 $P=137.012410$ Days $T_0=199.730293$ (BKJD)



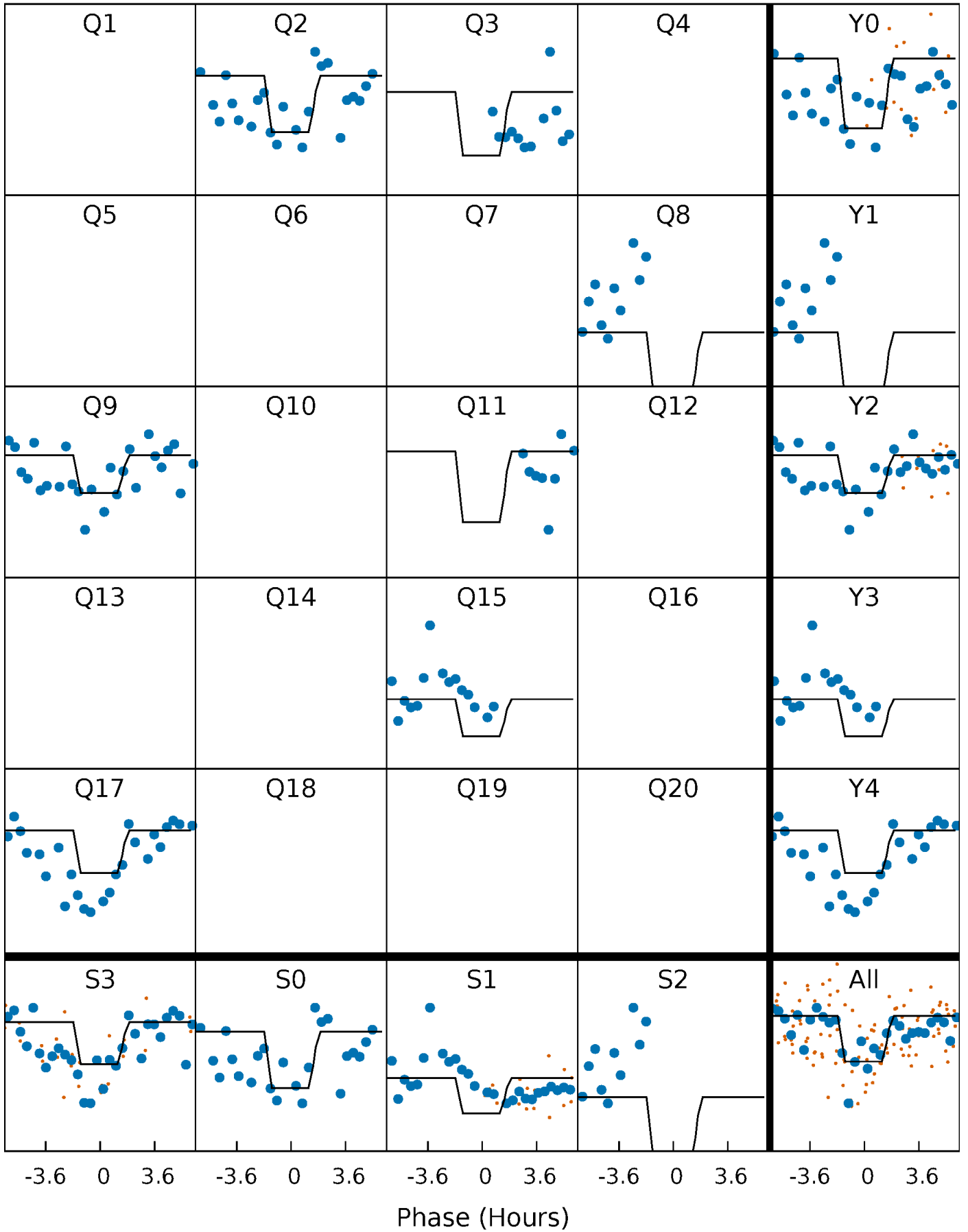
DV Quarter-Phased Transit Curves

TCE 009284487-04 P=137.012410 Days $T_0=199.730293$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

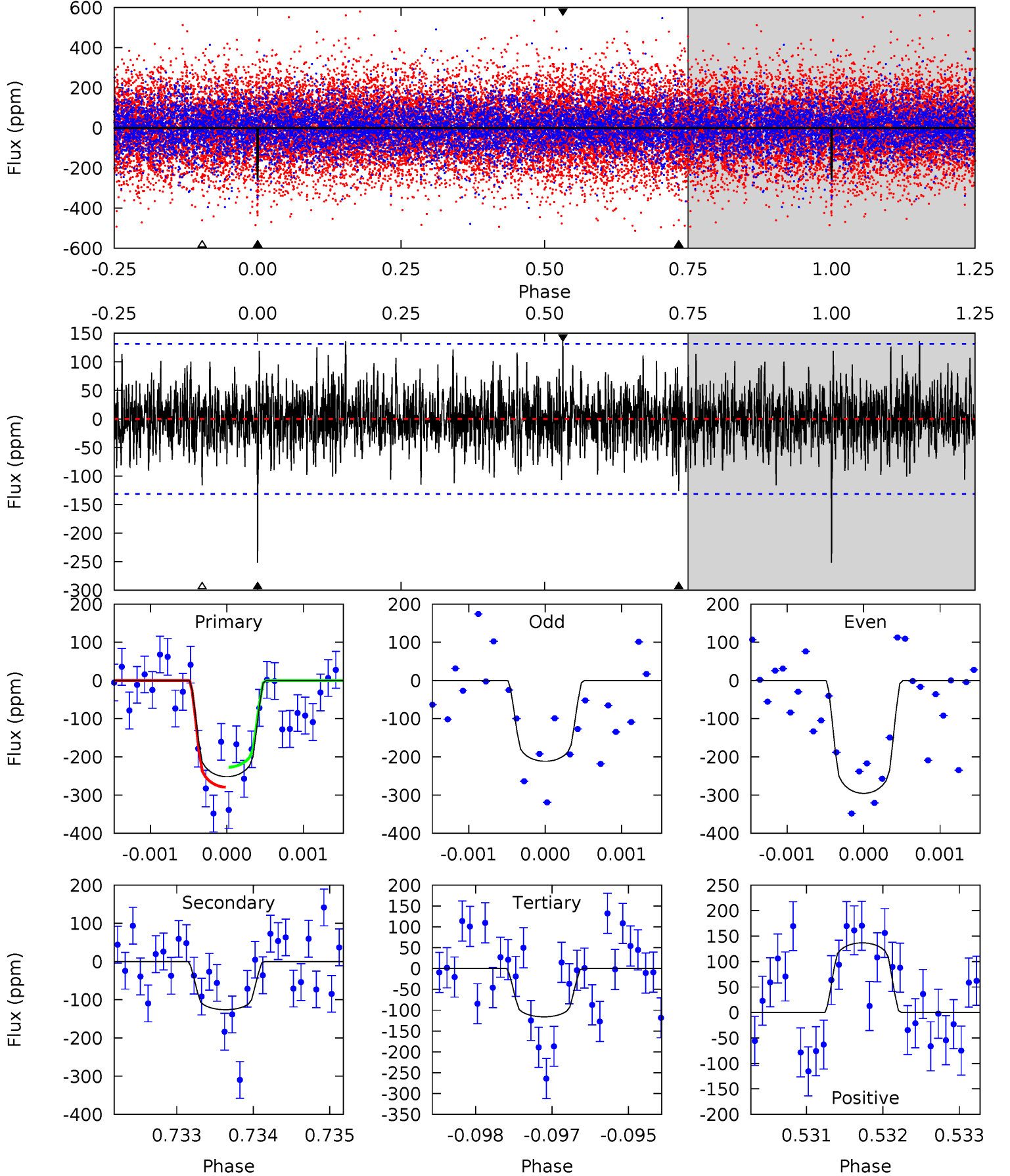
TCE 009284487-04 $P=137.011437$ Days $T_0=199.734761$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-04, $P = 137.012410$ Days, $E = 62.717883$ Days

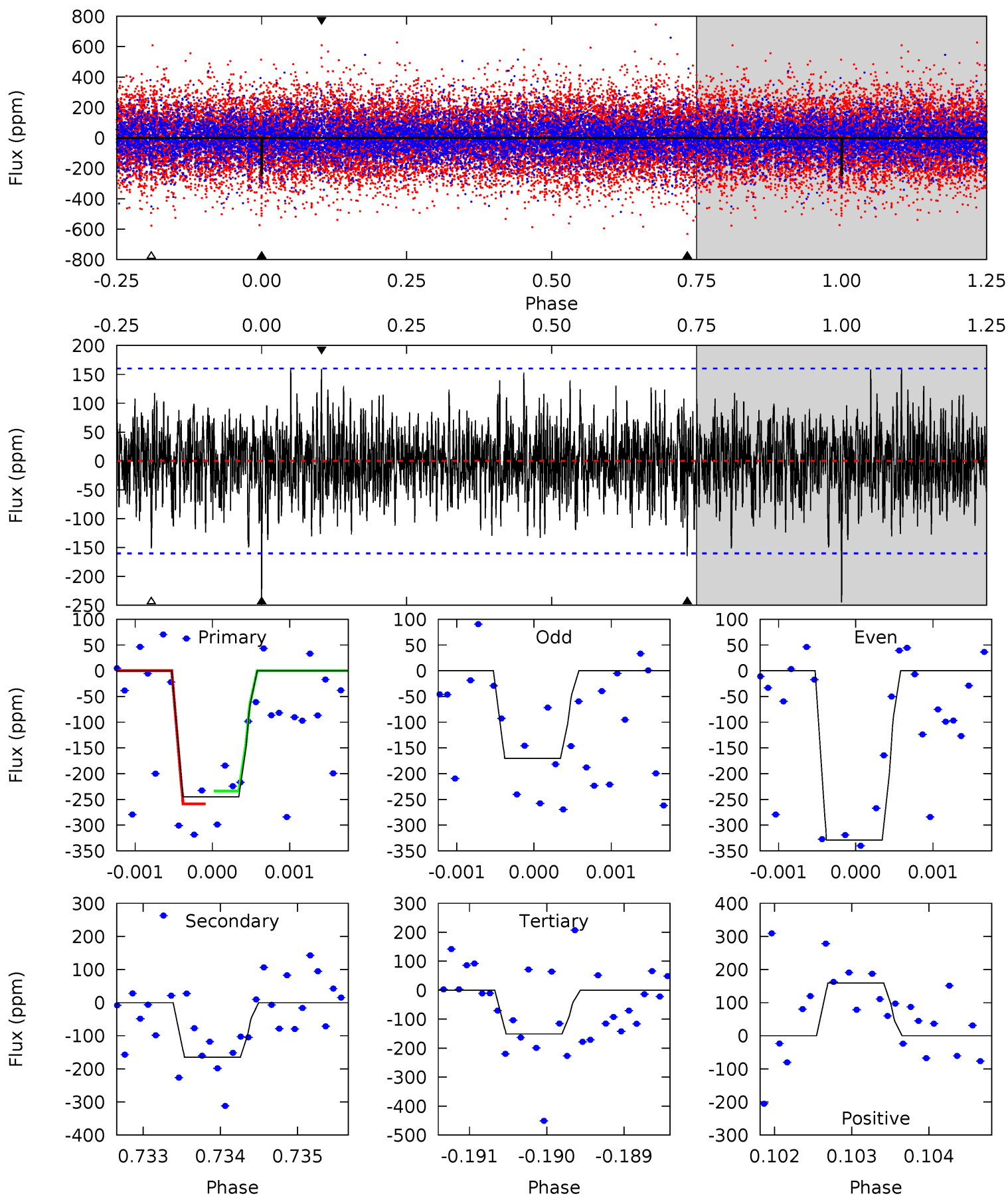
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	5.21	4.80	5.65	5.43	3.26	1.51	5.62	4.76	0.41	-0.44	1.74	1.05	0.35	1.08



Alt Model-Shift Uniqueness Test

009284487-04, P = 137.011437 Days, E = 62.723324 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.33	5.62	5.14	5.41	5.45	3.28	1.58	3.19	2.92	0.48	0.21	2.70	0.96	0.39	0.42



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-126 ± 24	$2.74^{+1.73}_{-1.46}$	714^{+53}_{-40}	5842^{+3287}_{-1087}	3034^{+11694}_{-1885}
Alt.	-165 ± 29	$2.73^{+1.79}_{-1.50}$	714^{+54}_{-42}	6301^{+4039}_{-1320}	4126^{+15760}_{-2635}

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 $A_{obs} \gg 1.0$

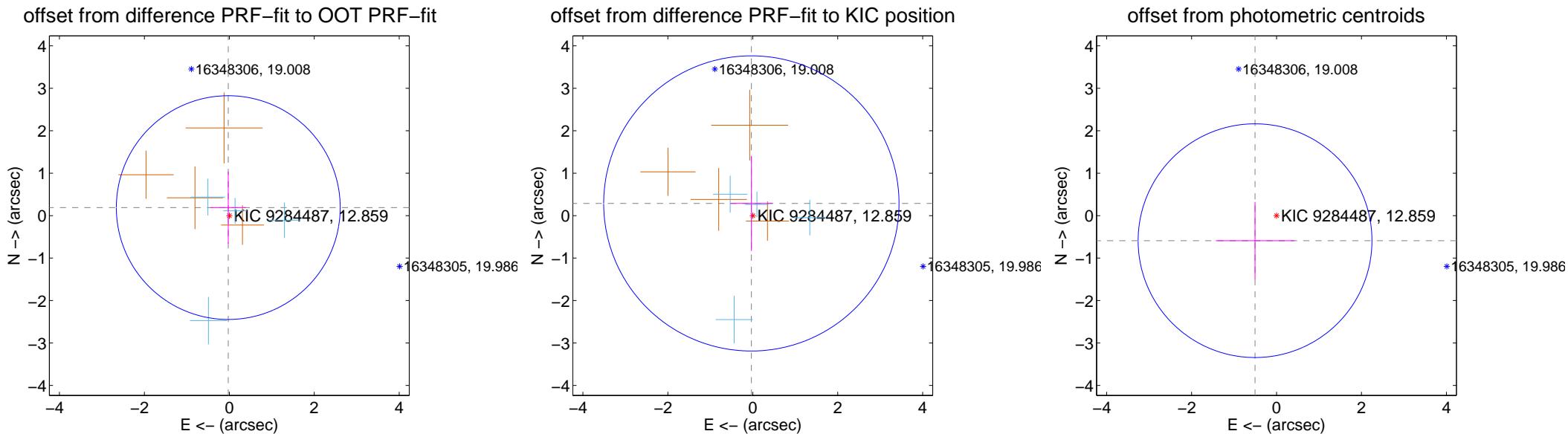
DV Centroid Data

Supplemental centroid analysis for 009284487-04. Kepler magnitude: 12.86. Transit SNR 8.30

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.191 ± 0.878	0.22	0.025 ± 0.417	0.189 ± 0.848
PRF-fit source offset from KIC position	0.290 ± 1.159	0.25	0.034 ± 0.493	0.288 ± 1.119
photometric centroid source offset	0.78 ± 0.92	0.85	0.51 ± 0.92	-0.59 ± 0.91



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.

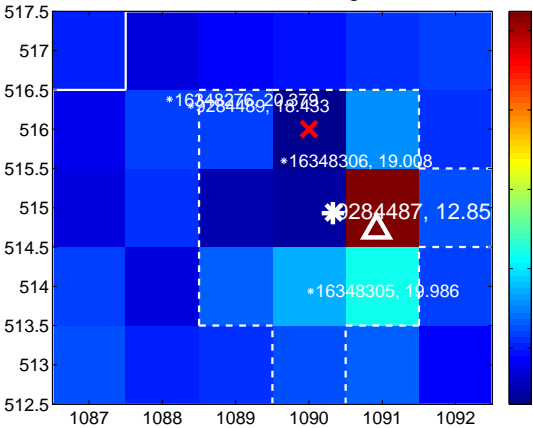
Q1 no difference image



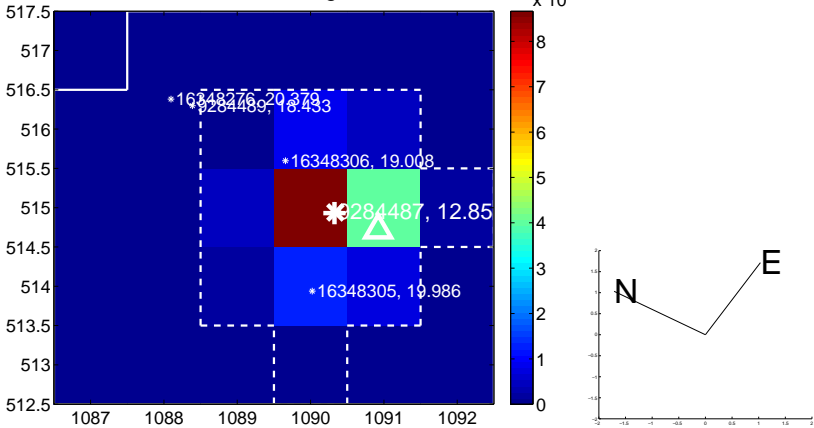
Q1 no OOT image



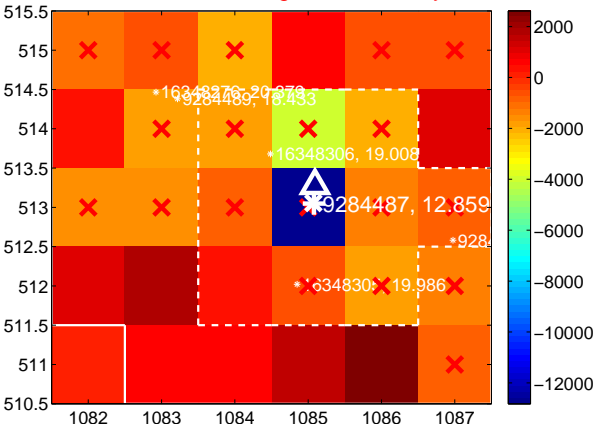
Q2 difference image



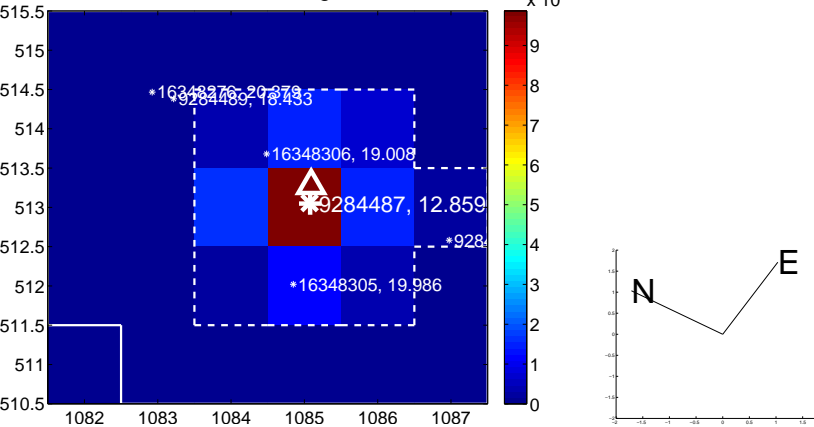
Q2 OOT image



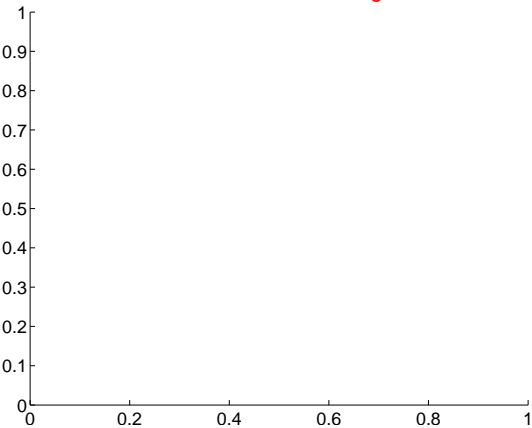
Q3 difference image. Poor Quality



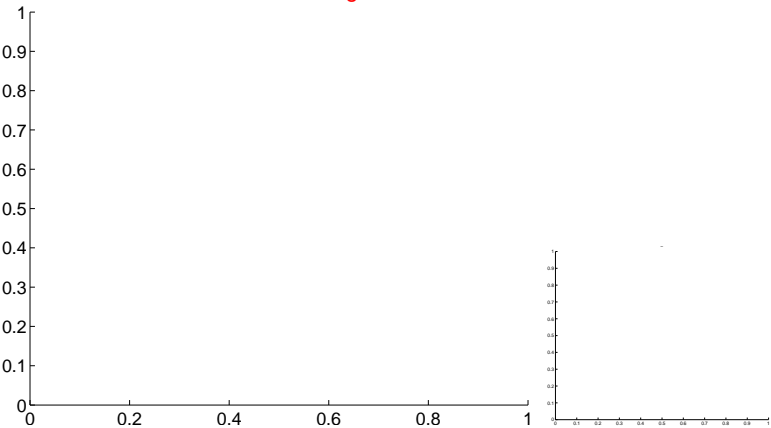
Q3 OOT image



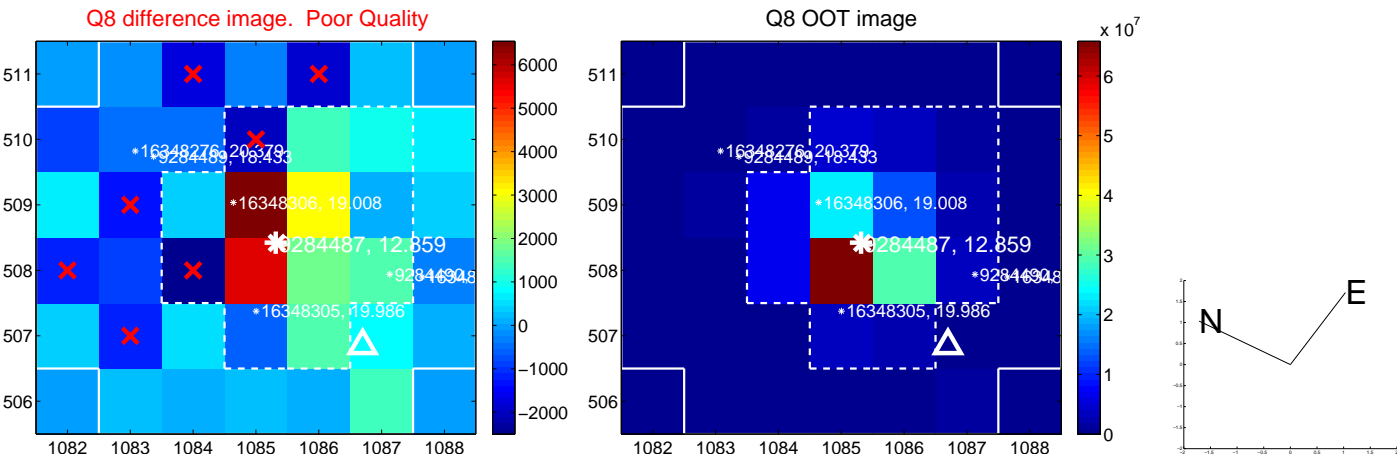
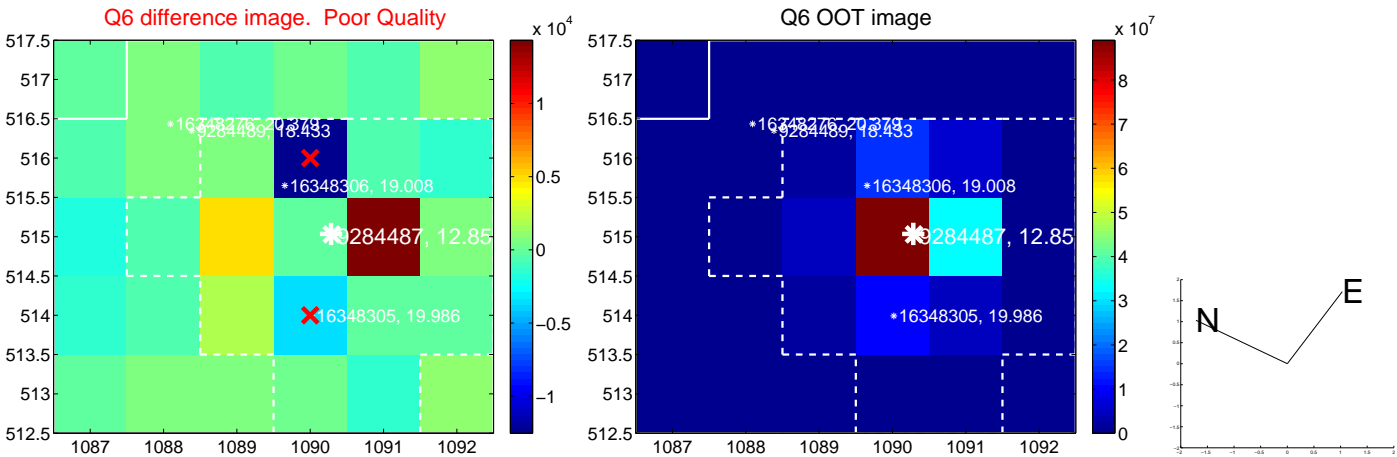
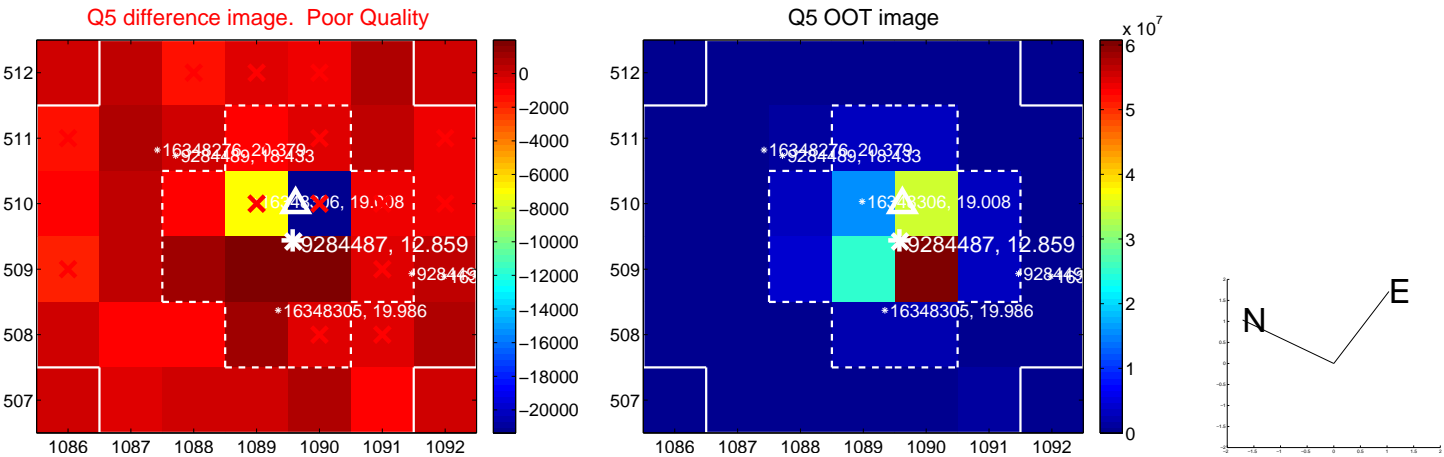
Q4 no difference image



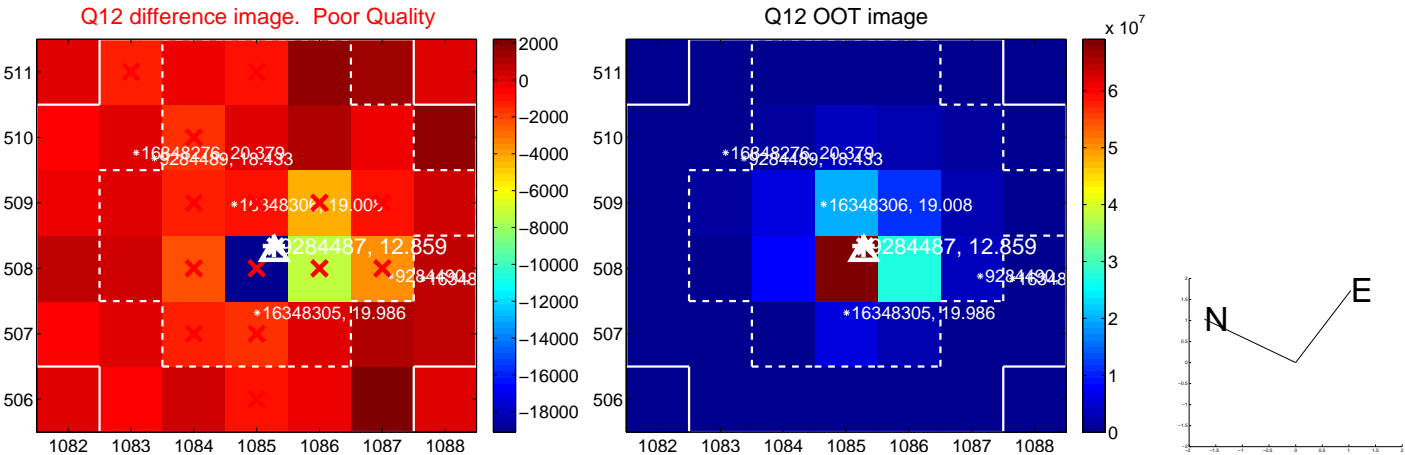
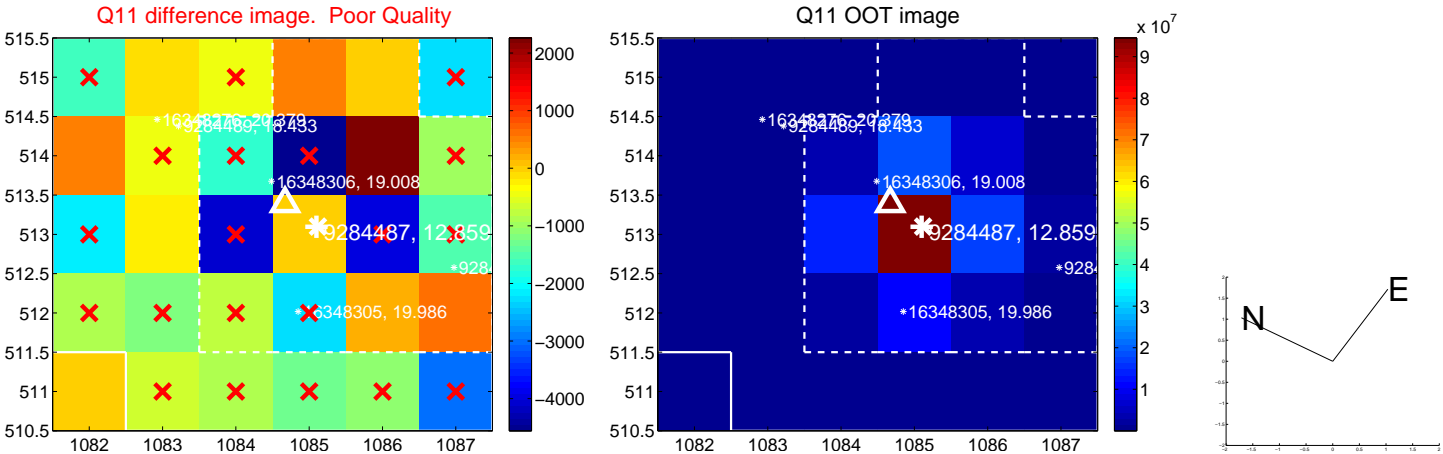
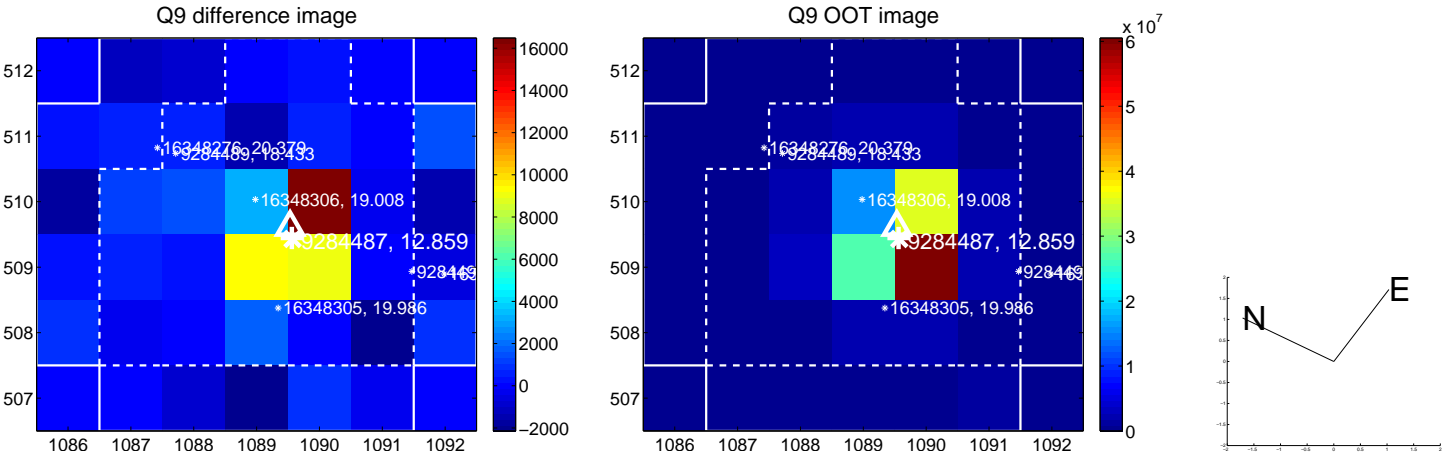
Q4 no OOT image



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



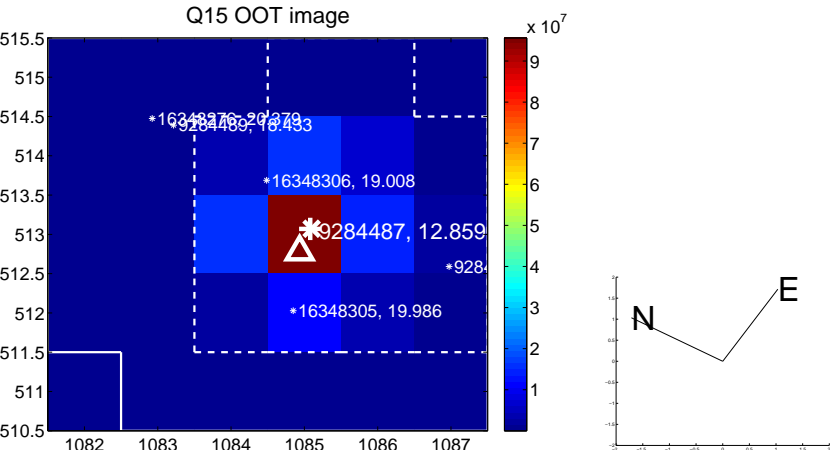
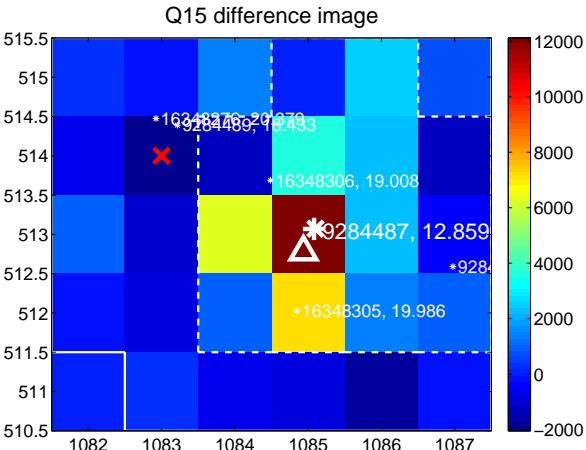
Q13 no OOT image



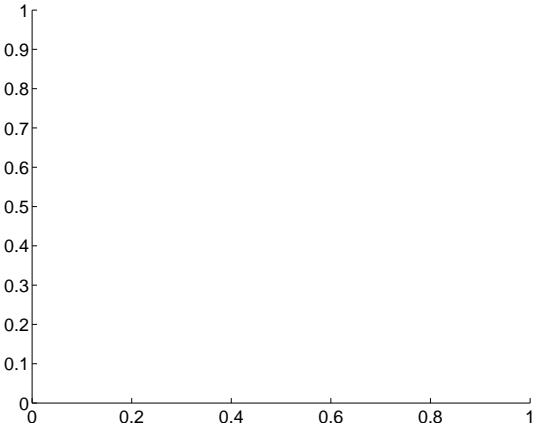
Q14 no difference image



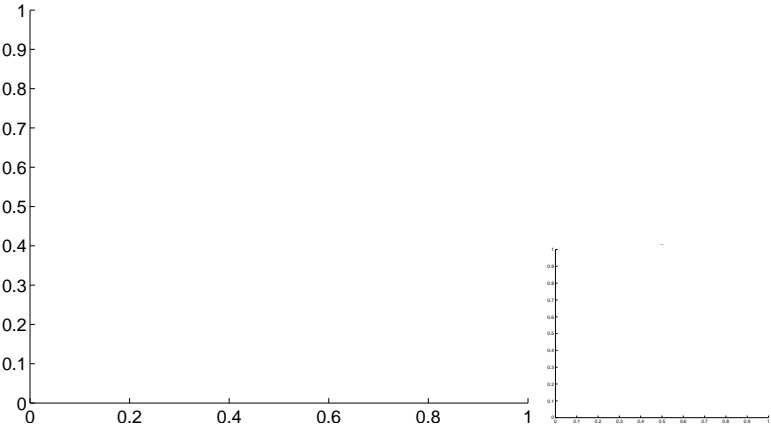
Q14 no OOT image



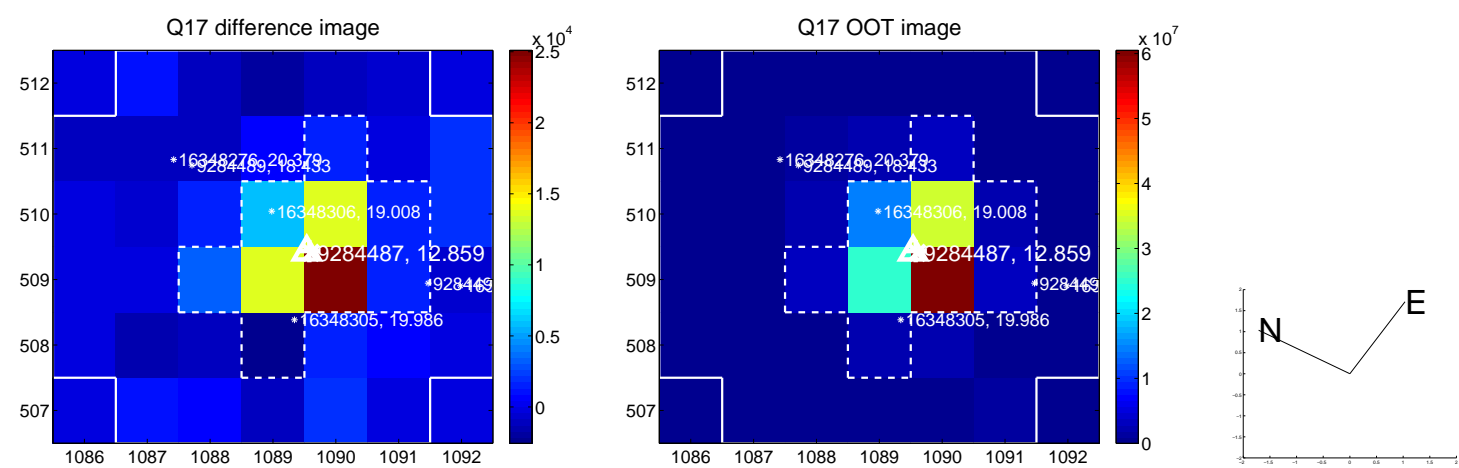
Q16 no difference image



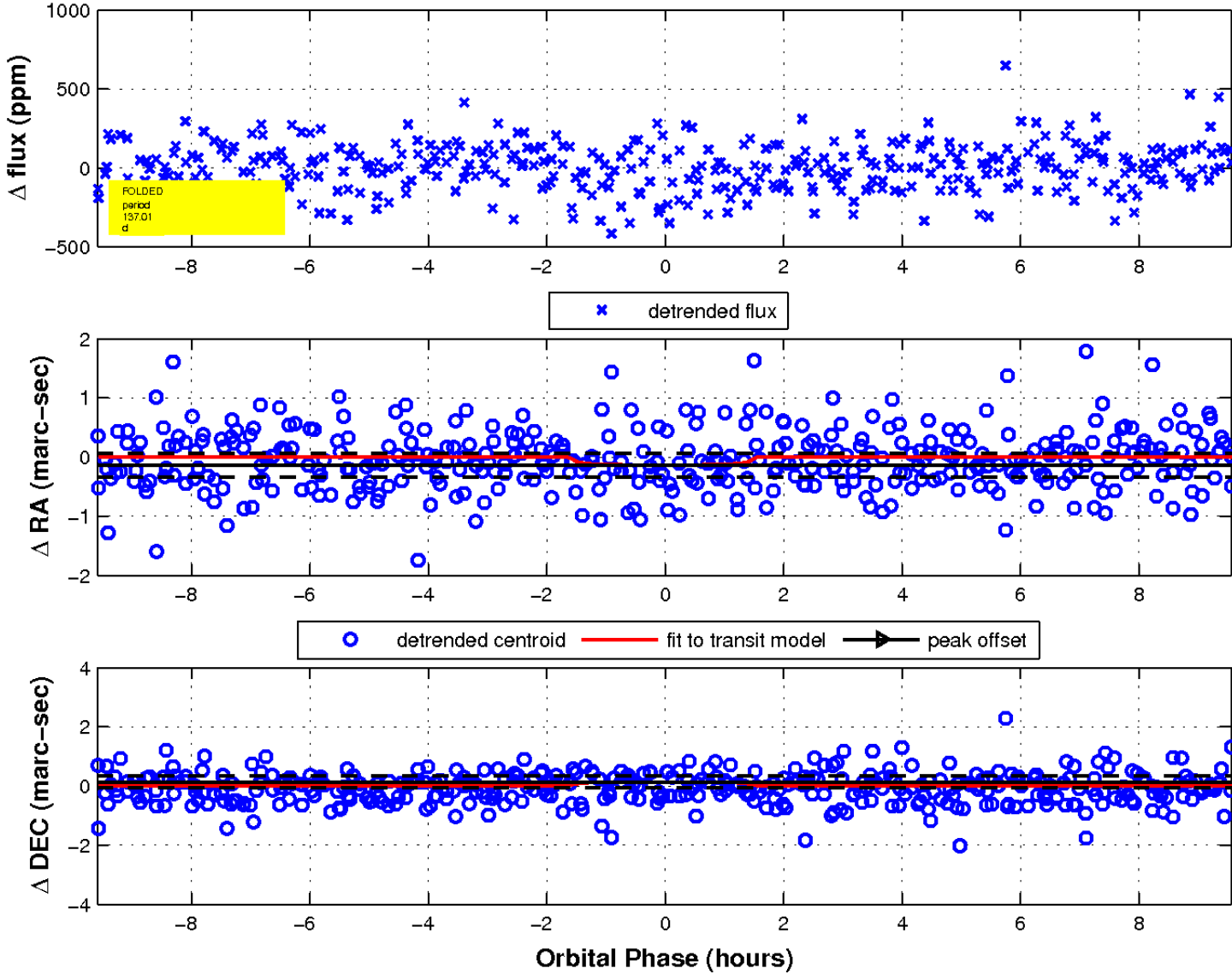
Q16 no OOT image



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

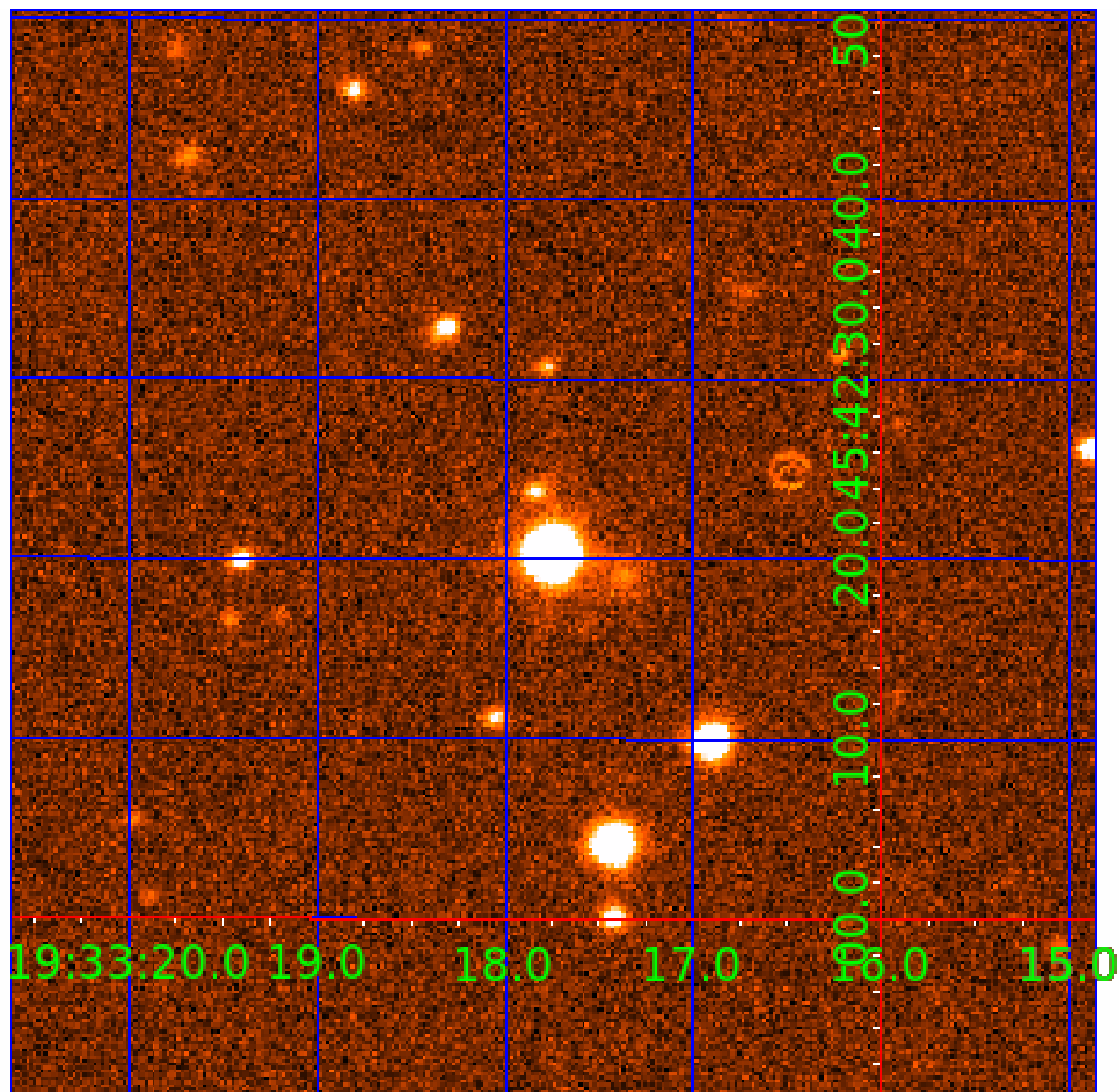


fluxWeightedCentroids, Planet 4 of 10



UKIRT Image

Declination



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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

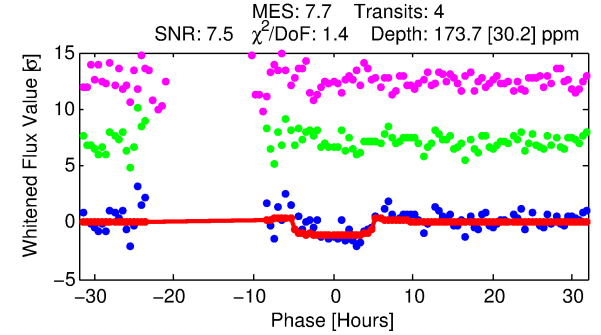
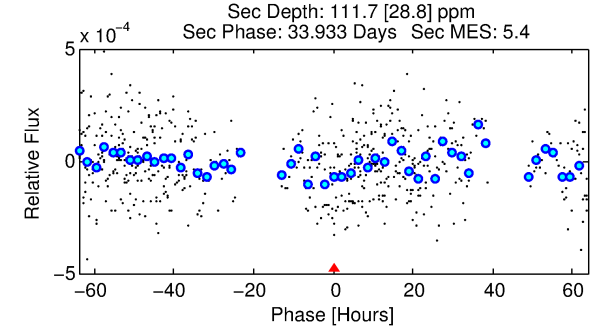
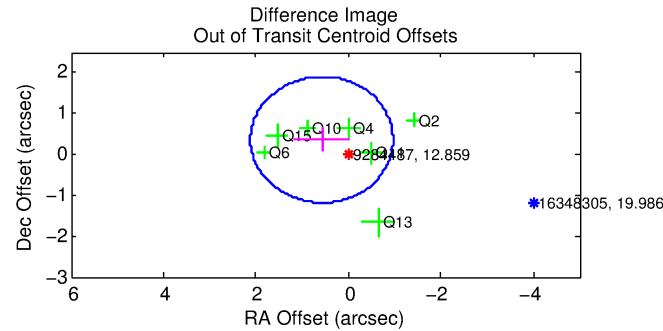
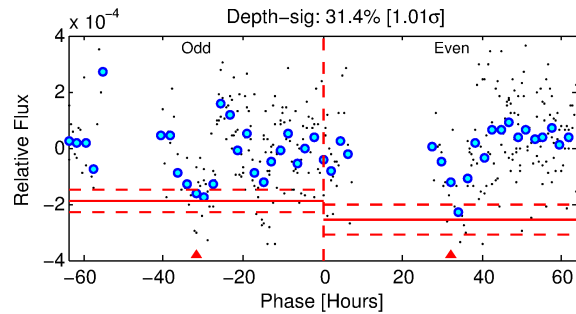
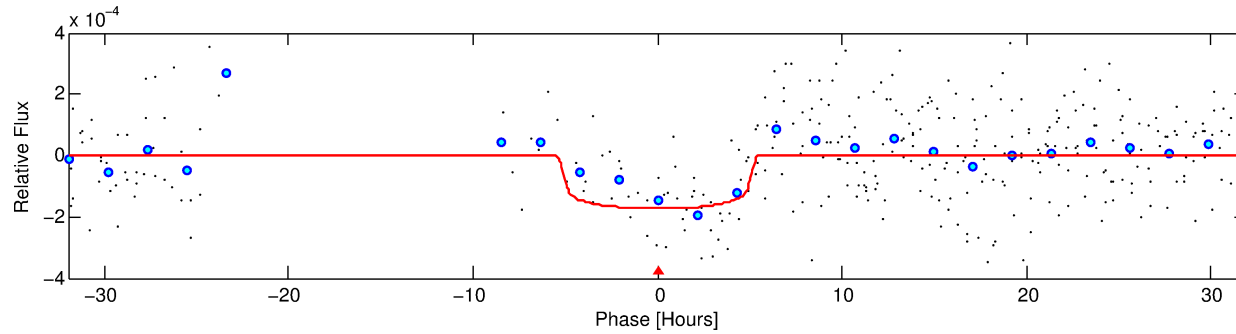
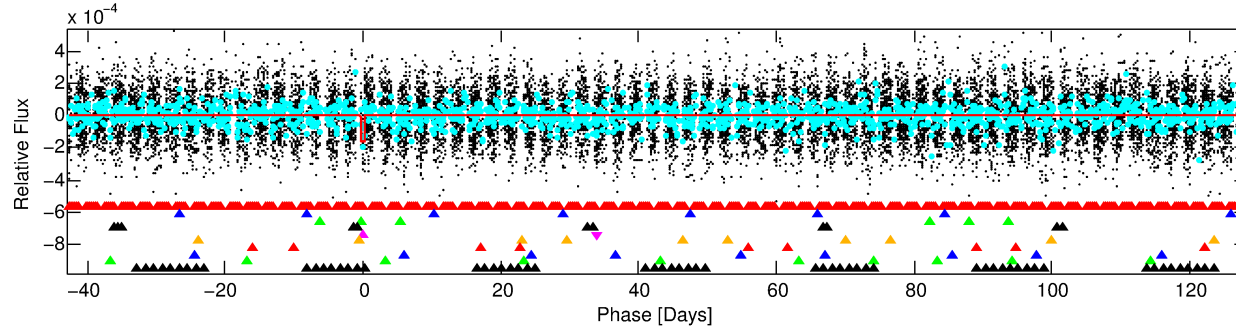
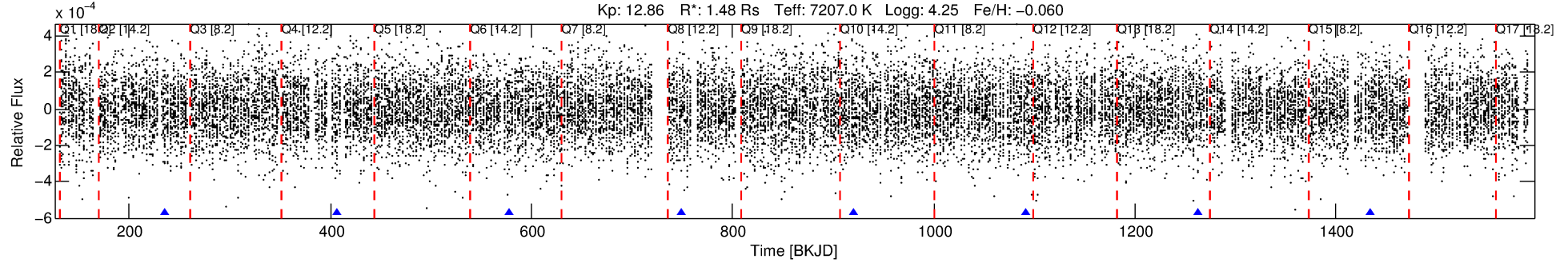
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-05

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 5 of 10 Period: 171.109 d



DV Fit Results:

Period = 171.10911 [0.01275] d
Epoch = 235.8901 [0.0176] BKJD
Rp/R* = 0.0135 [0.0034]
a/R* = 70.71 [102.77]
b = 0.83 [0.53]
Seff = 11.44 [4.77]
Teq = 469 [49] K
Rp = 2.18 [0.94] Re
a = 0.6803 [0.1901] AU
Ag = 5991.96 [4115.23] [1.46 σ]
Teffp = 6379 [935] K [6.31 σ]

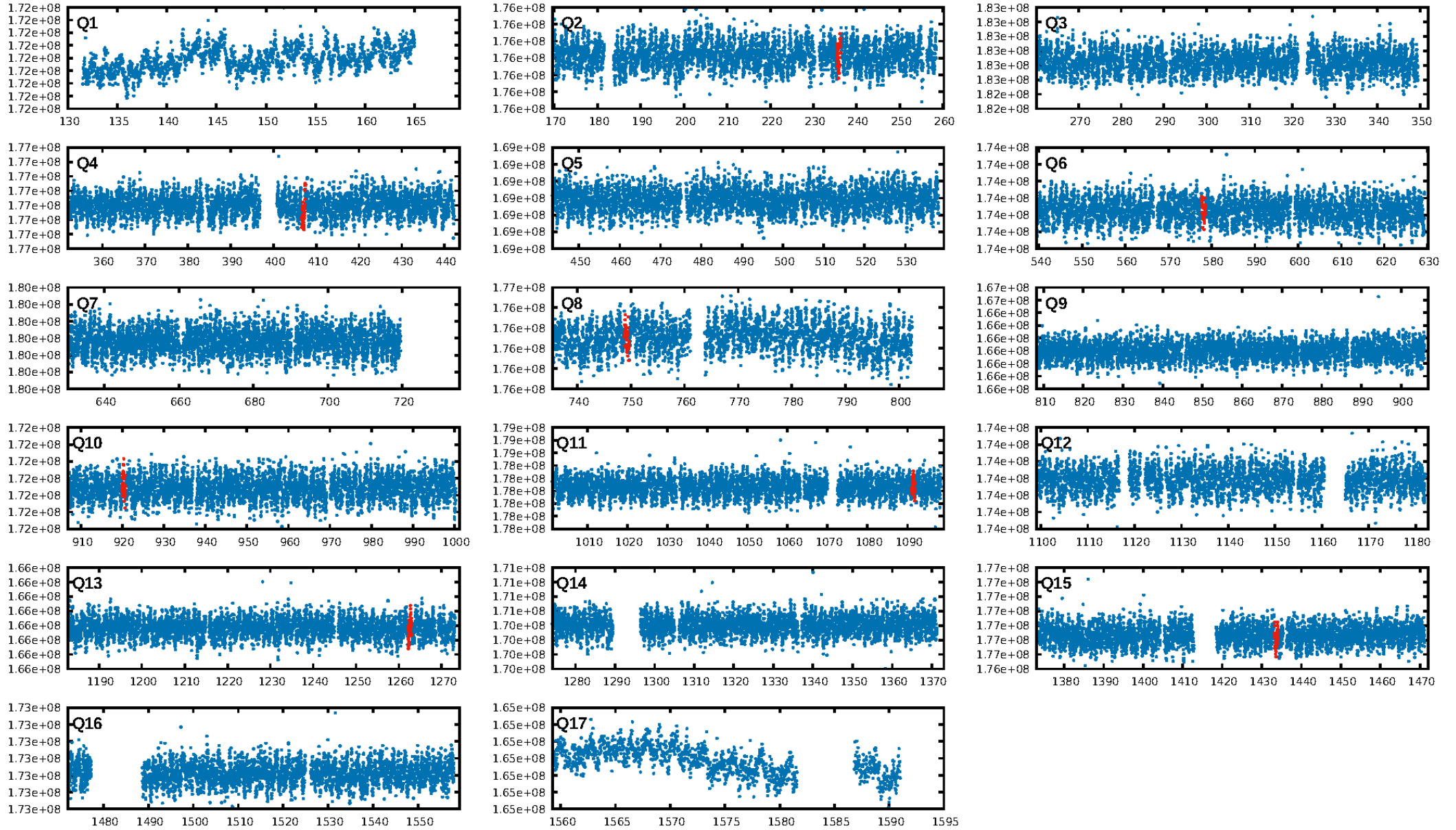
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.00 σ]
LongPeriod-sig: 100.0% [18.07 σ]
ModelChiSquare2-sig: 53.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.76e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -6.002
Centroid-sig: 74.9%
Centroid-so: 0.341 arcsec [0.44 σ]
OotOffset-rm: 0.683 arcsec [1.33 σ]
OotOffset-st: 3/2/1/1 [7]
KicOffset-rm: 0.676 arcsec [1.39 σ]
KicOffset-st: 3/2/1/1 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.12 [1/8]

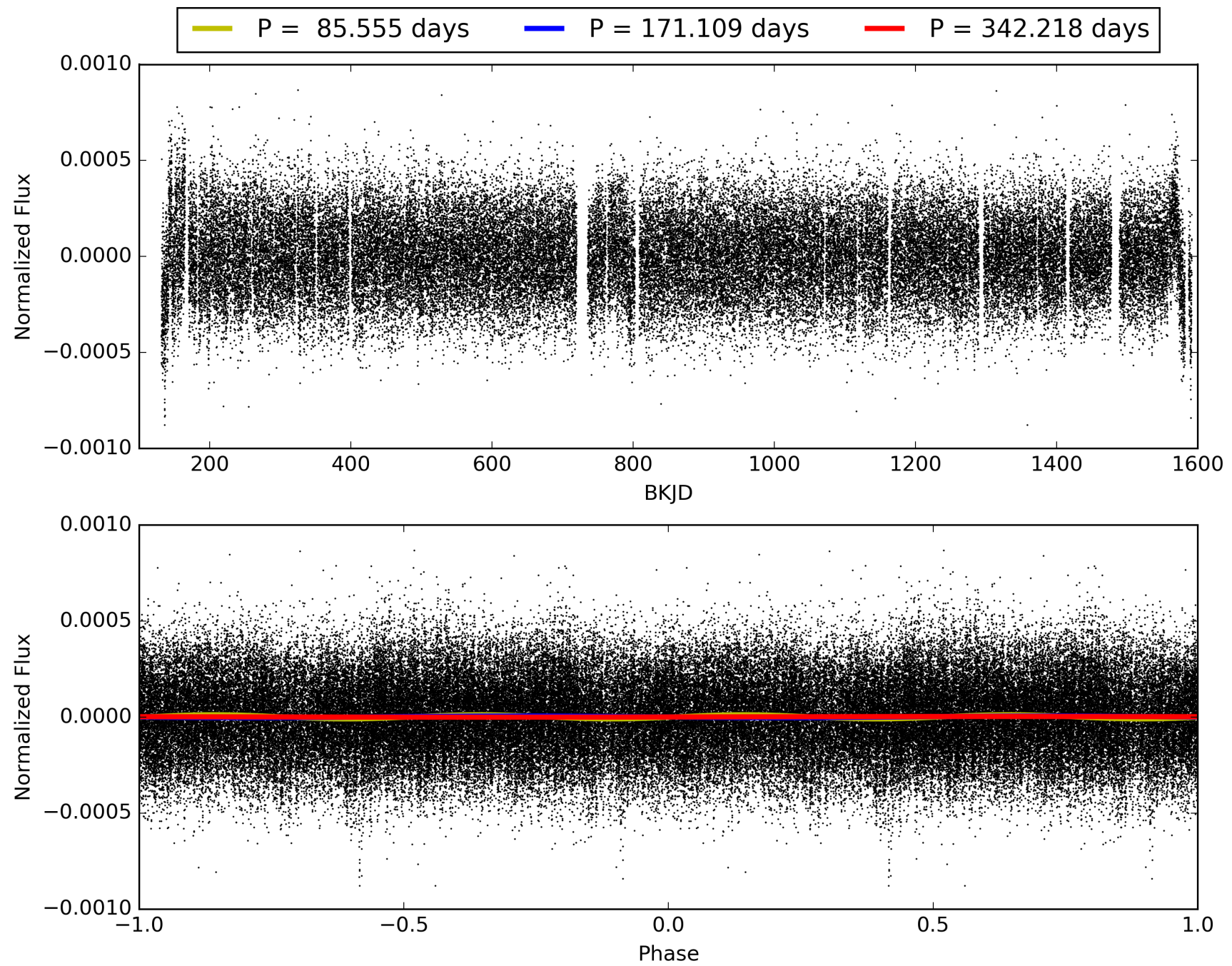
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:40:07 Z

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

TCE 009284487-05, PDC Light Curves

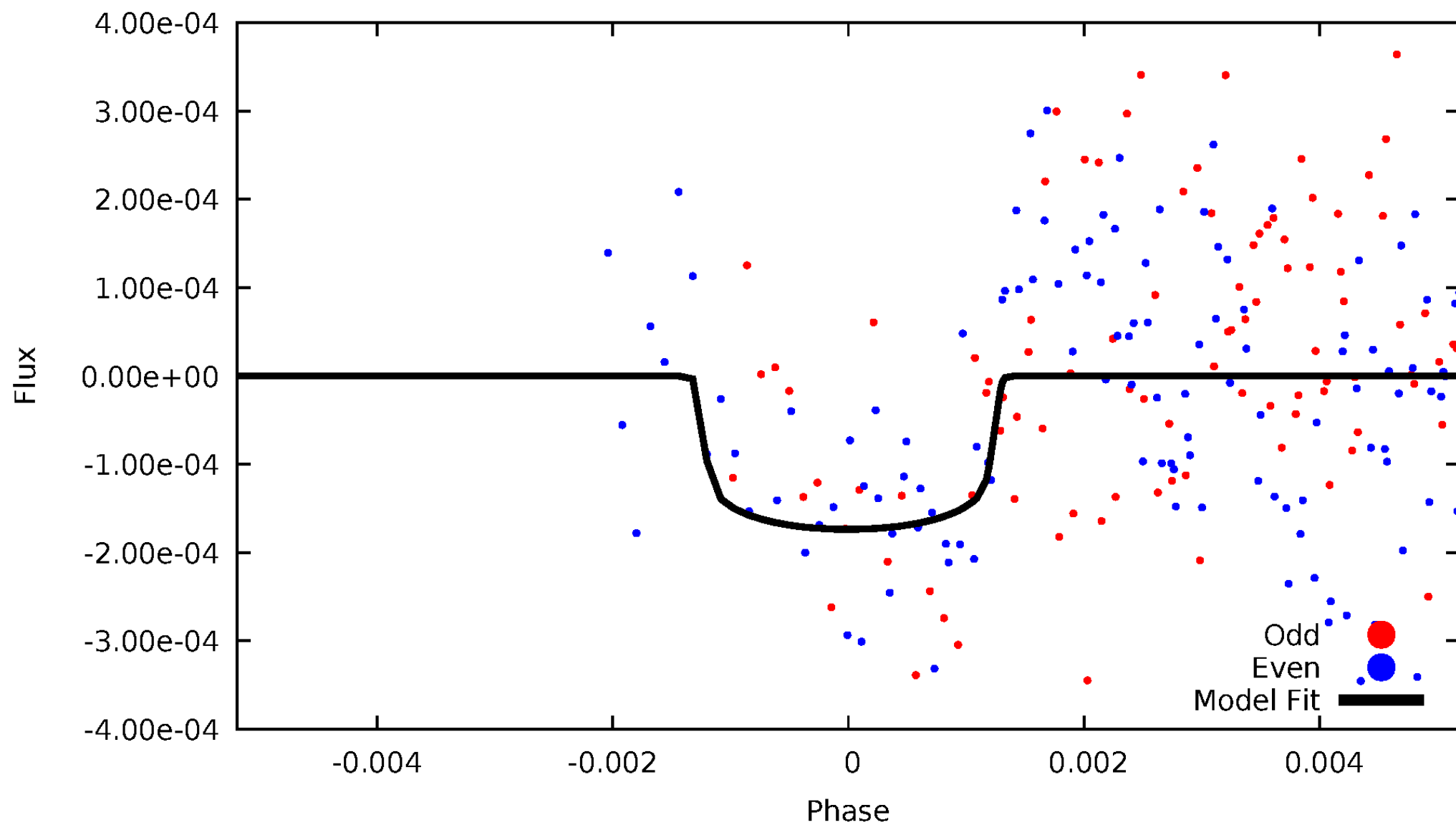


TCE 009284487-05



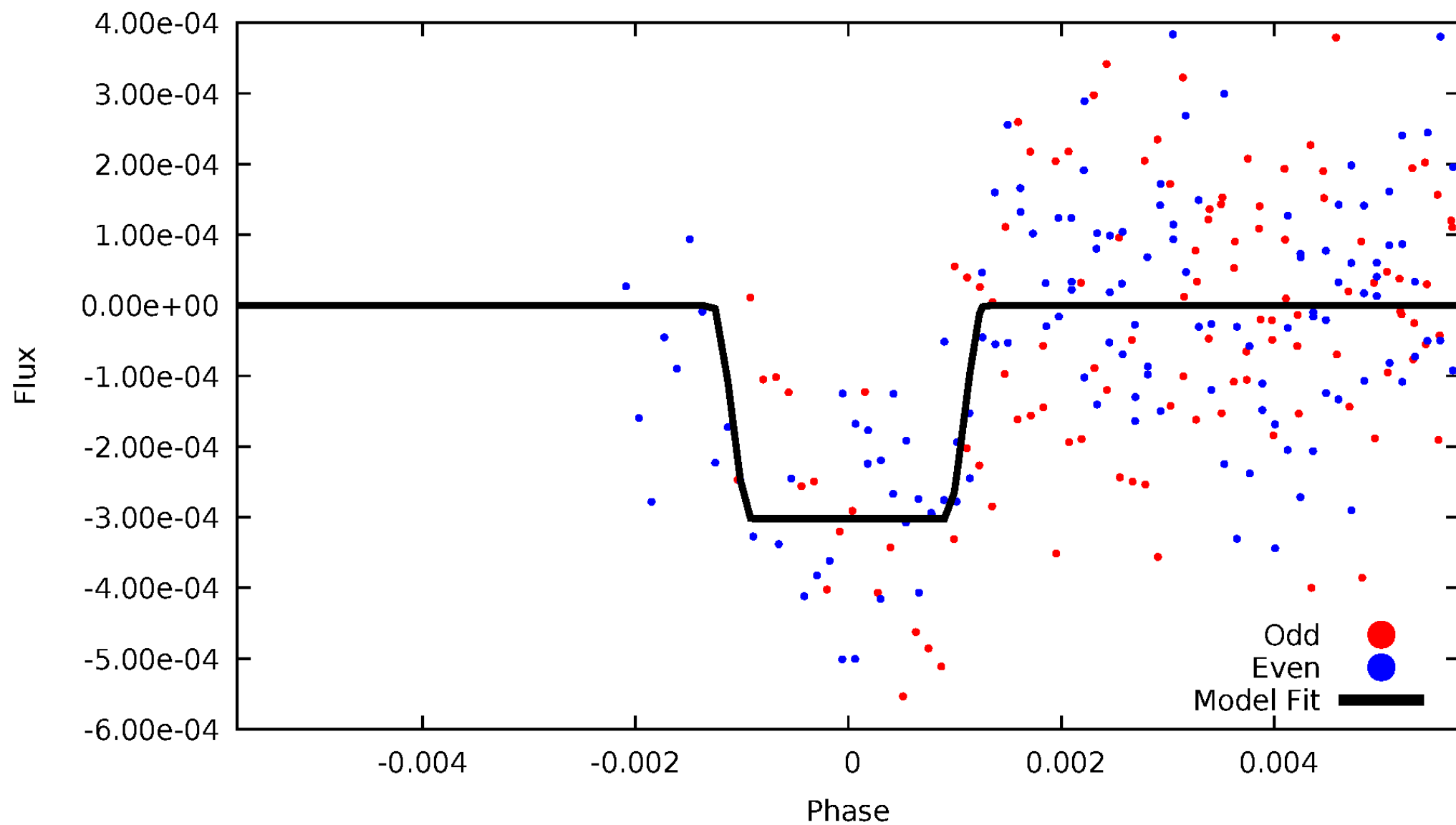
DV Odd/Even

TCE 009284487-05



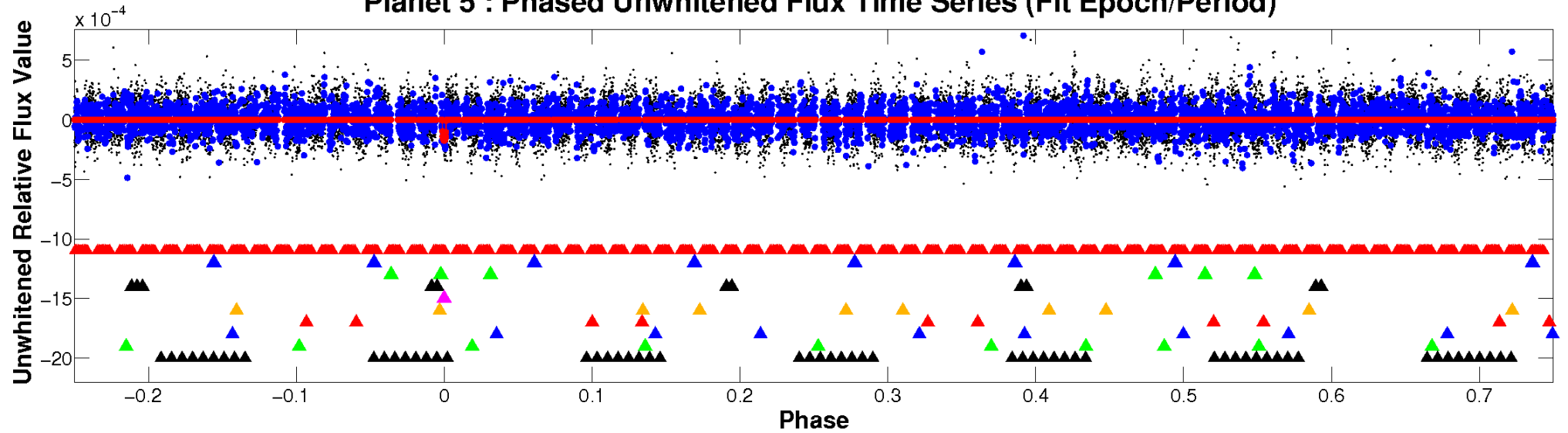
ALT Odd/Even

TCE 009284487-05

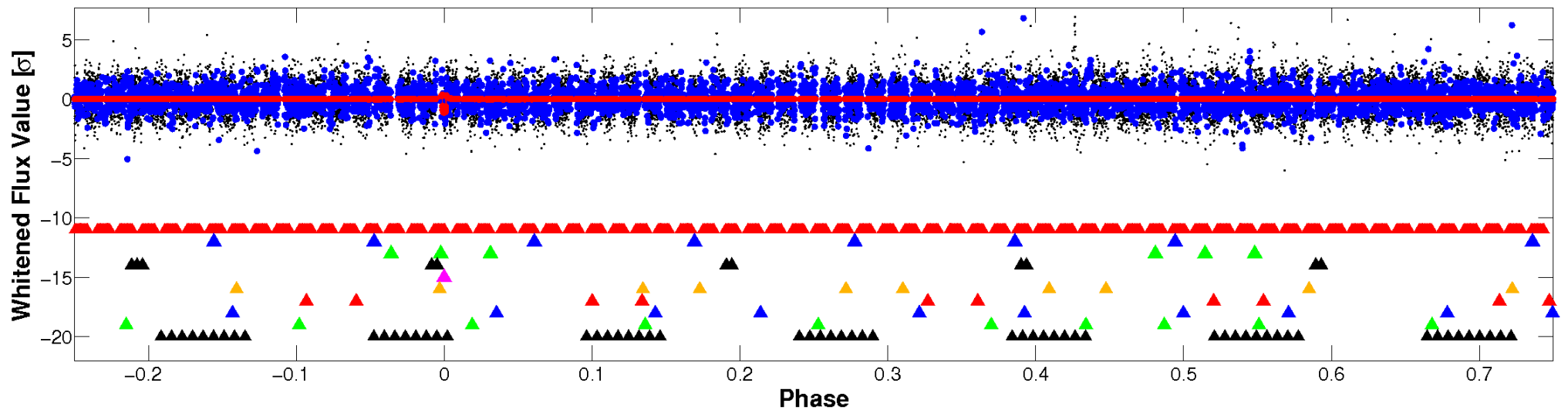


Non-Whitened Vs. Whitened Light Curve

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

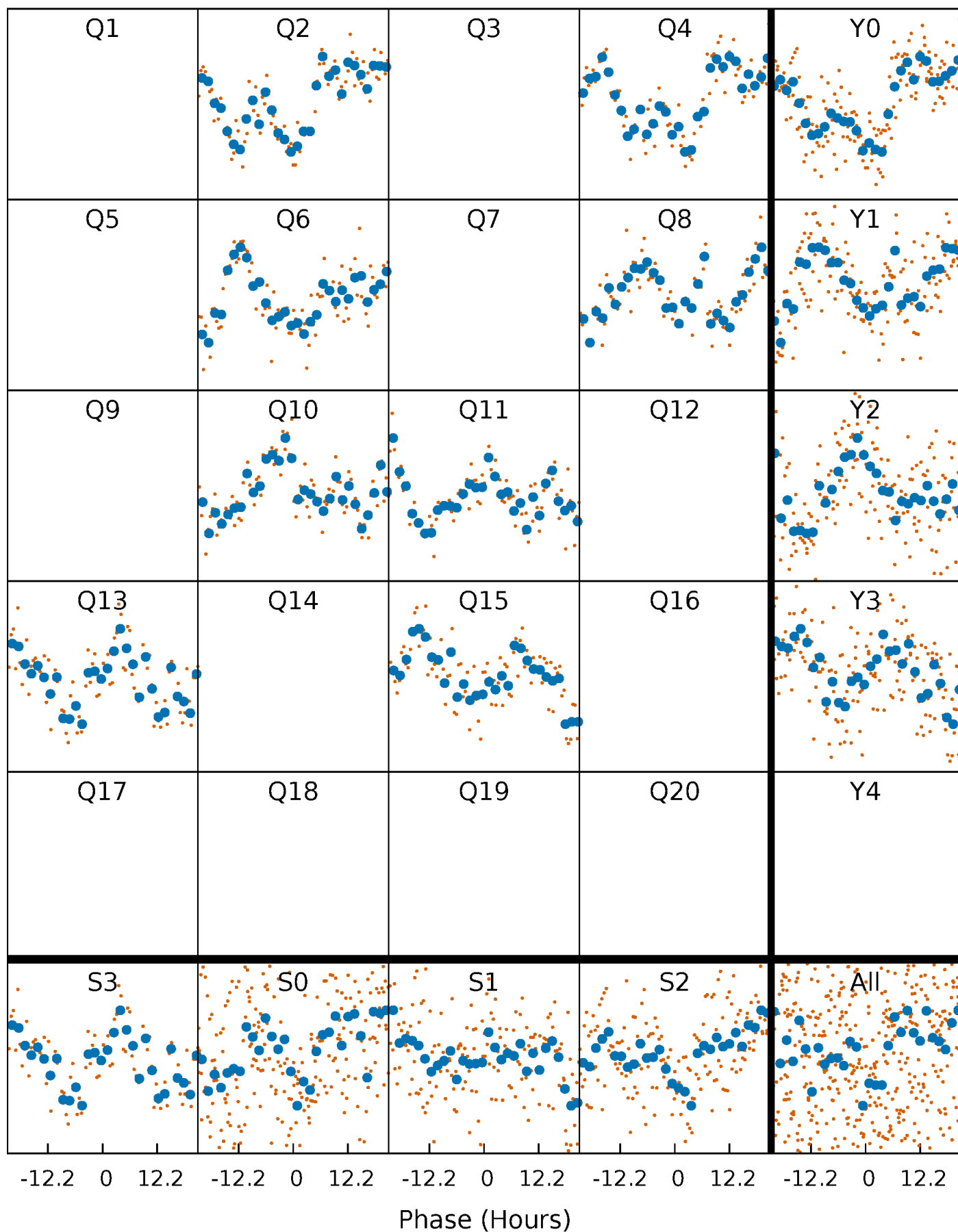


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



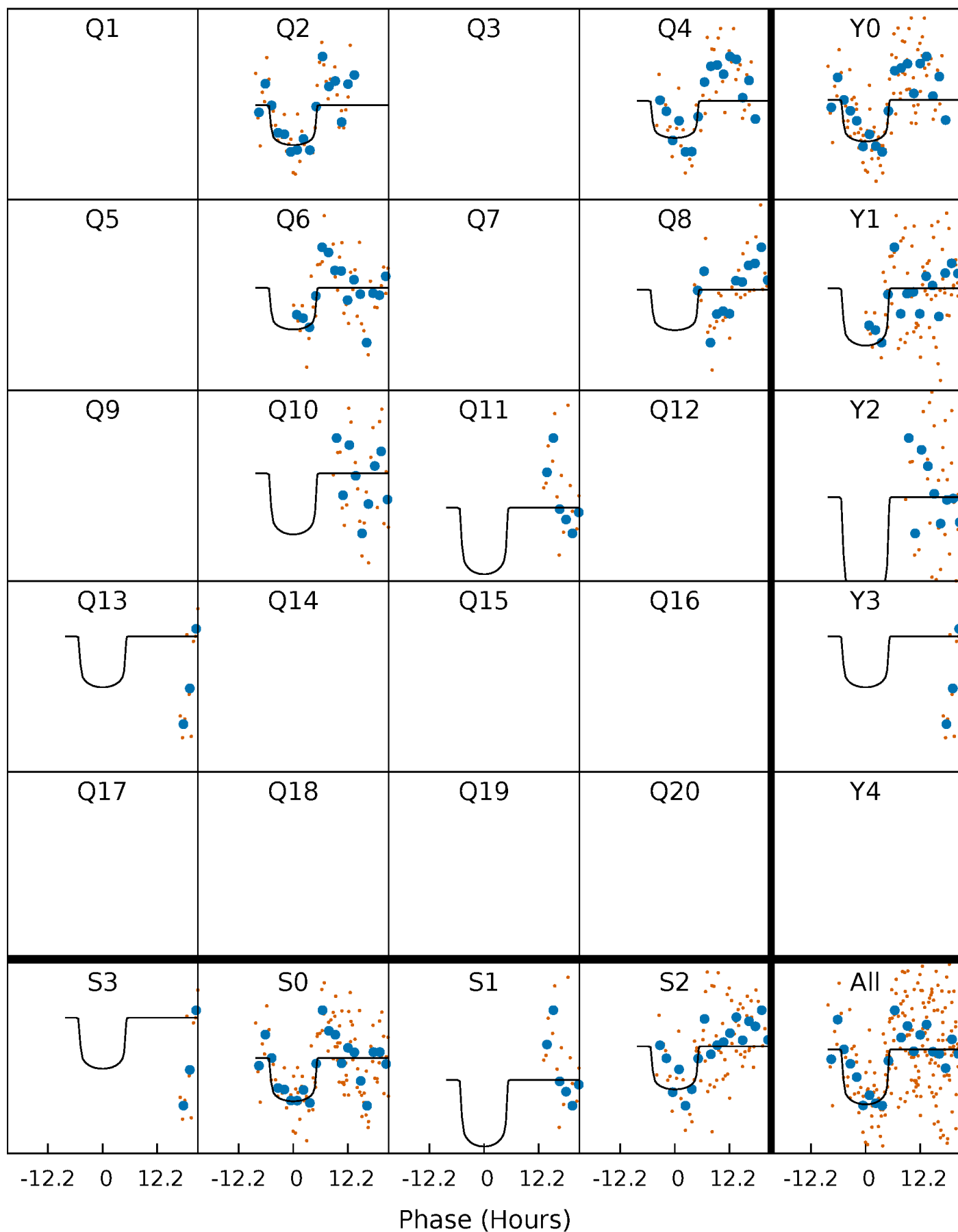
PDC Quarter-Phased Transit Curves

TCE 009284487-05 $P=171.109107$ Days $T_0=235.890138$ (BKJD)



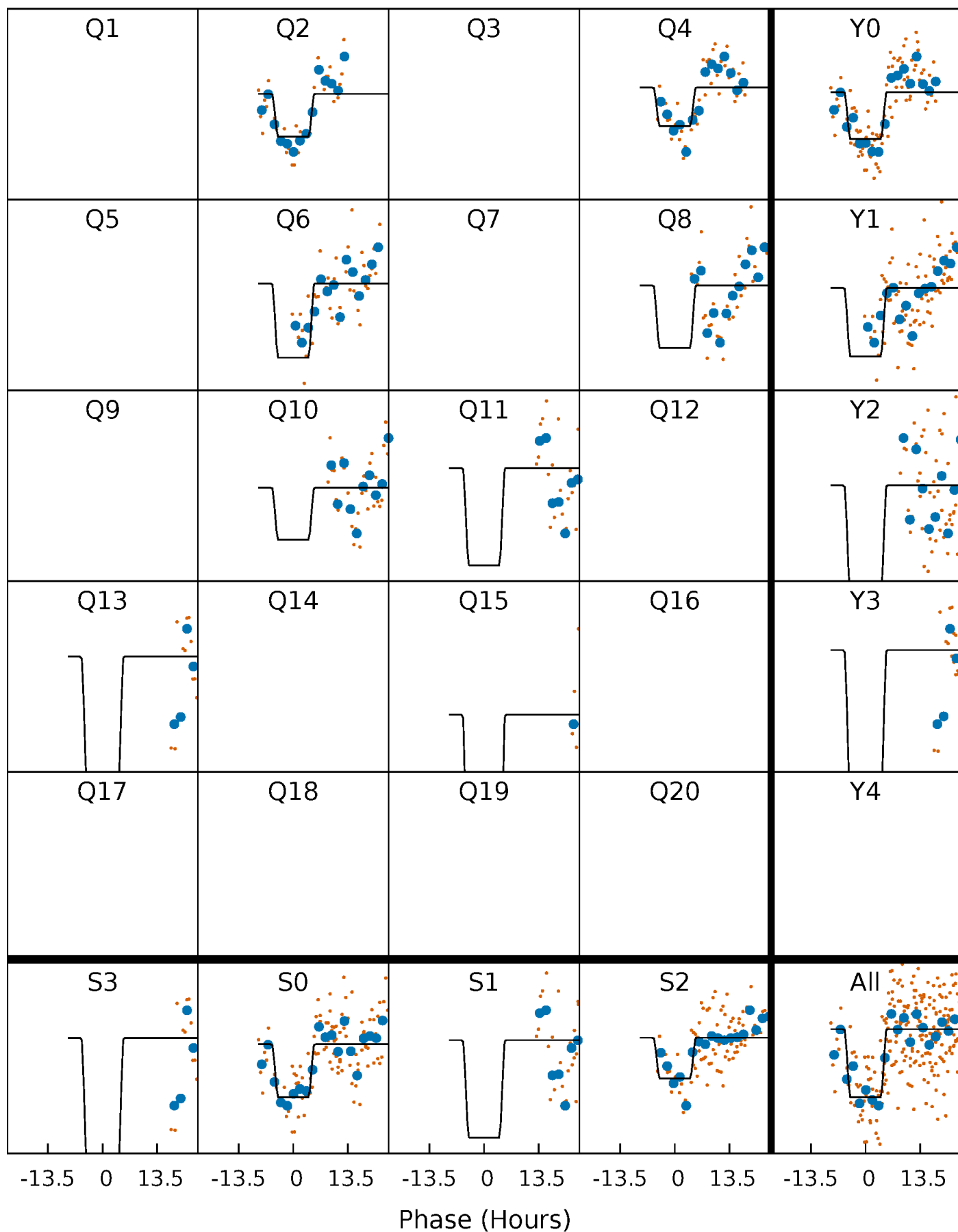
DV Quarter-Phased Transit Curves

TCE 009284487-05 P=171.109107 Days $T_0=235.890138$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

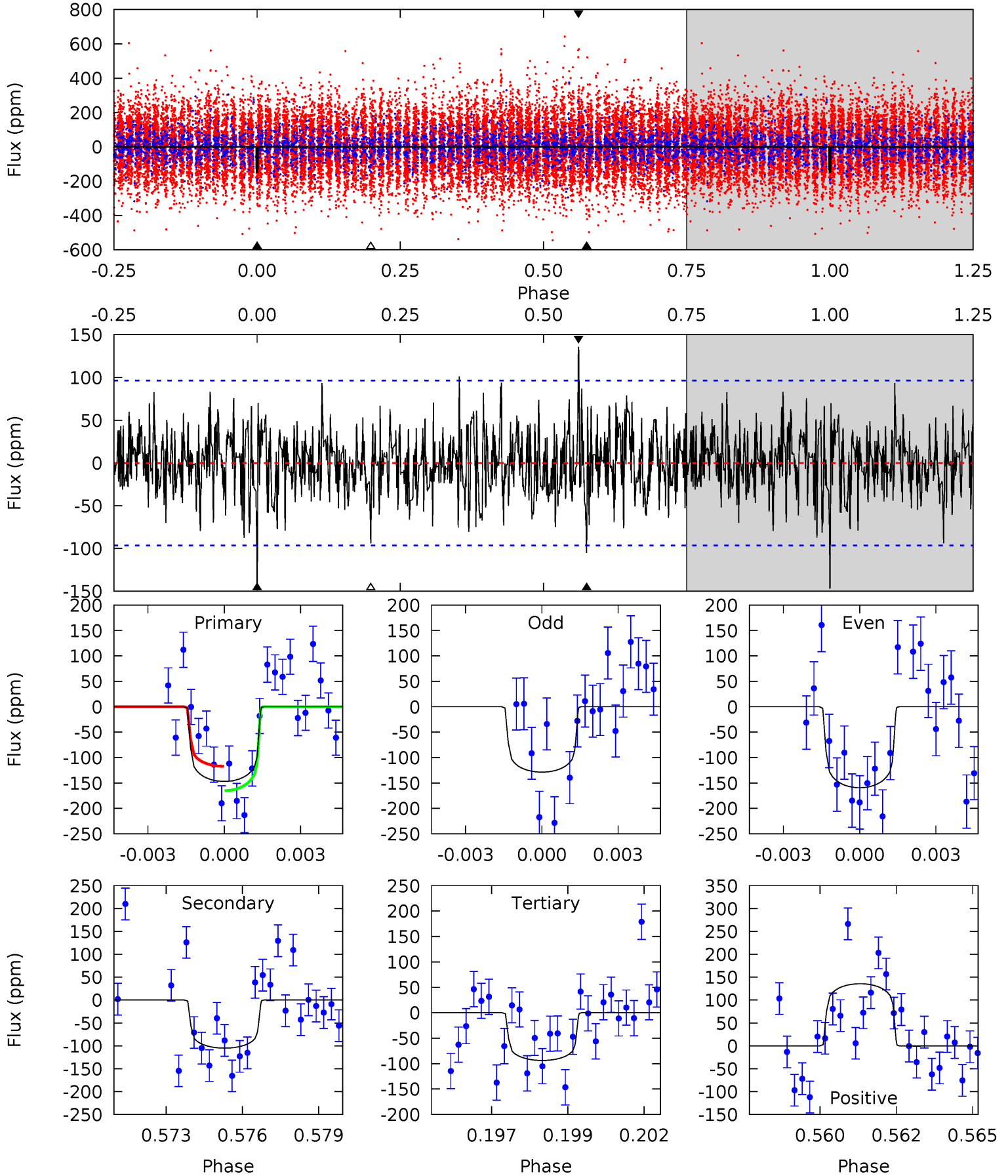
TCE 009284487-05 $P=171.110631$ Days $T_0=235.898656$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-05, $P = 171.109107$ Days, $E = 64.781031$ Days

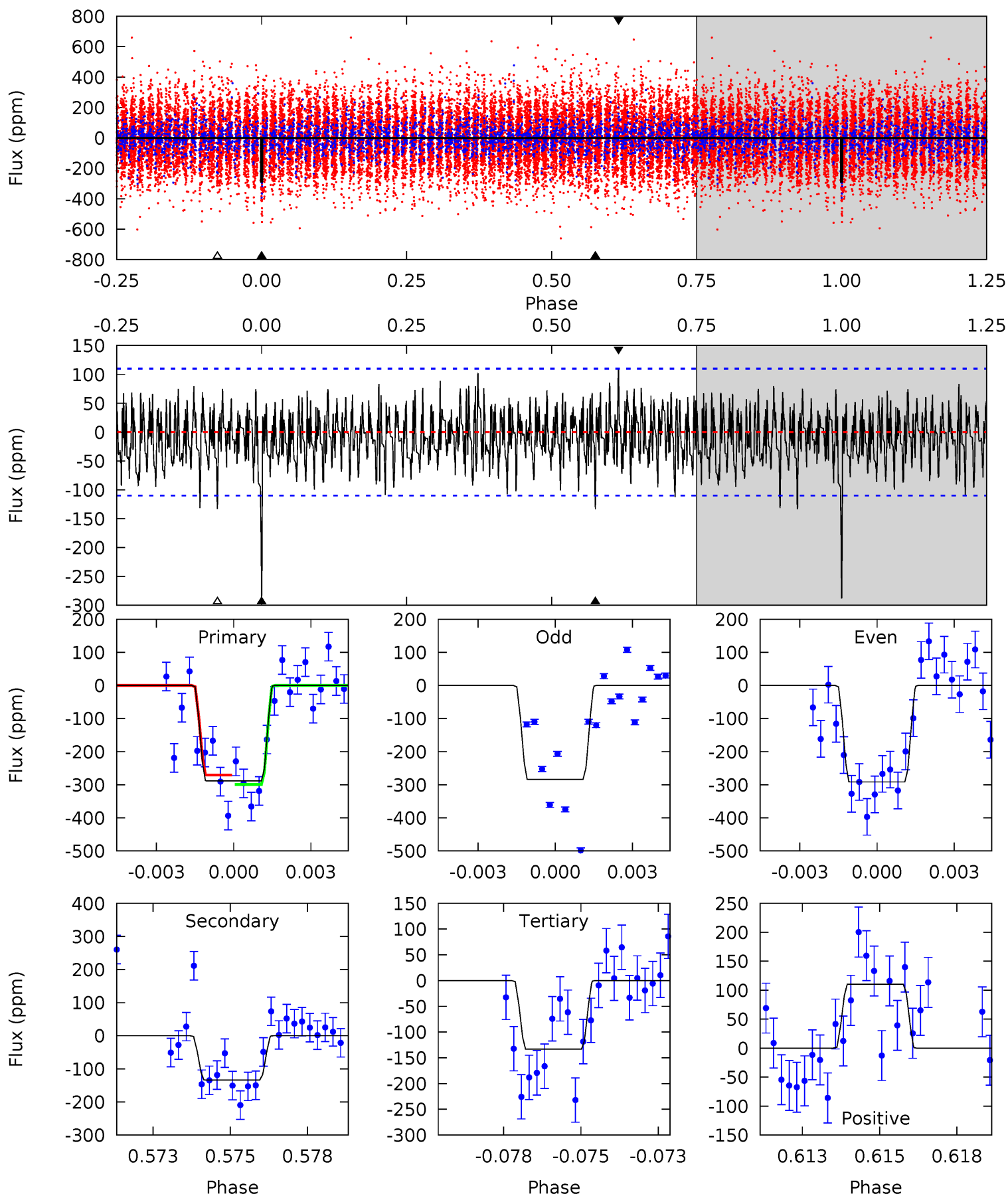
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.03	5.74	5.12	7.42	5.27	3.00	1.66	2.90	0.61	0.62	-1.68	0.83	0.78	0.48	1.24



Alt Model-Shift Uniqueness Test

009284487-05, P = 171.110631 Days, E = 64.788025 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	6.41	6.40	5.31	5.29	3.02	1.72	7.44	8.54	0.01	1.10	0.19	0.77	0.28	0.66



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-105 ± 18	$2.22^{+0.75}_{-0.54}$	662^{+47}_{-37}	6187^{+964}_{-716}	5291^{+4093}_{-2303}
Alt.	-133 ± 21	$2.86^{+0.76}_{-0.59}$	664^{+47}_{-40}	5821^{+718}_{-528}	4101^{+2448}_{-1529}

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 $A_{obs} \gg 1.0$

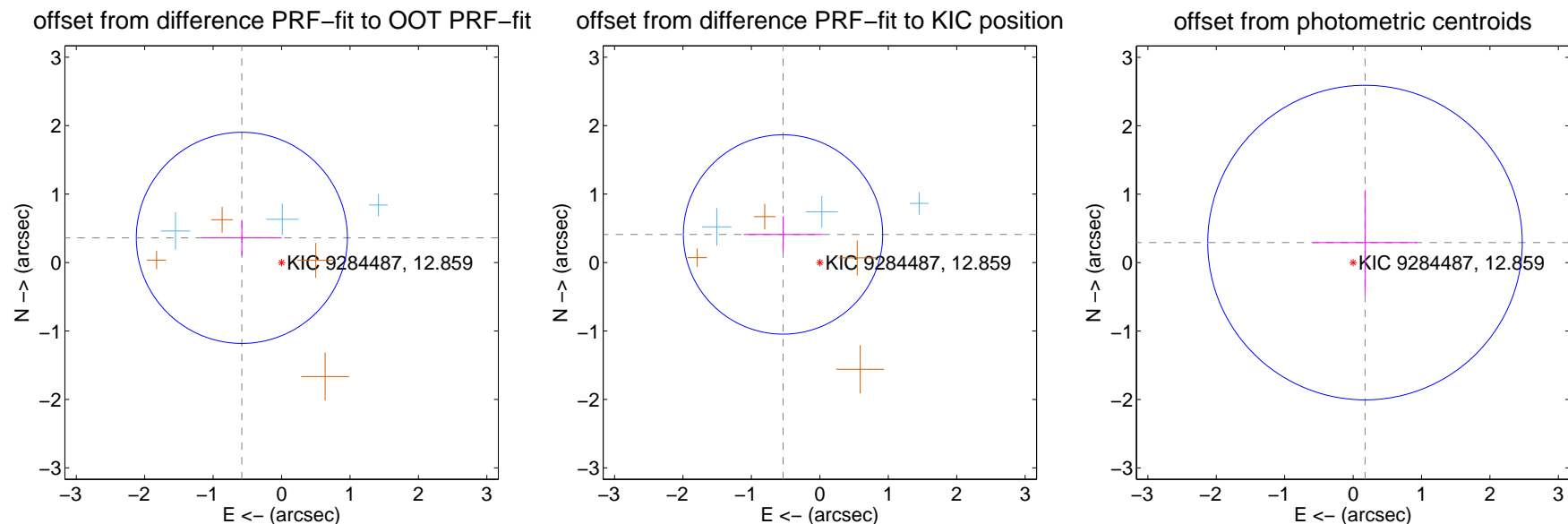
DV Centroid Data

Supplemental centroid analysis for 009284487-05. Kepler magnitude: 12.86. Transit SNR 7.55

There are 3 quarters with good PRF difference image offsets

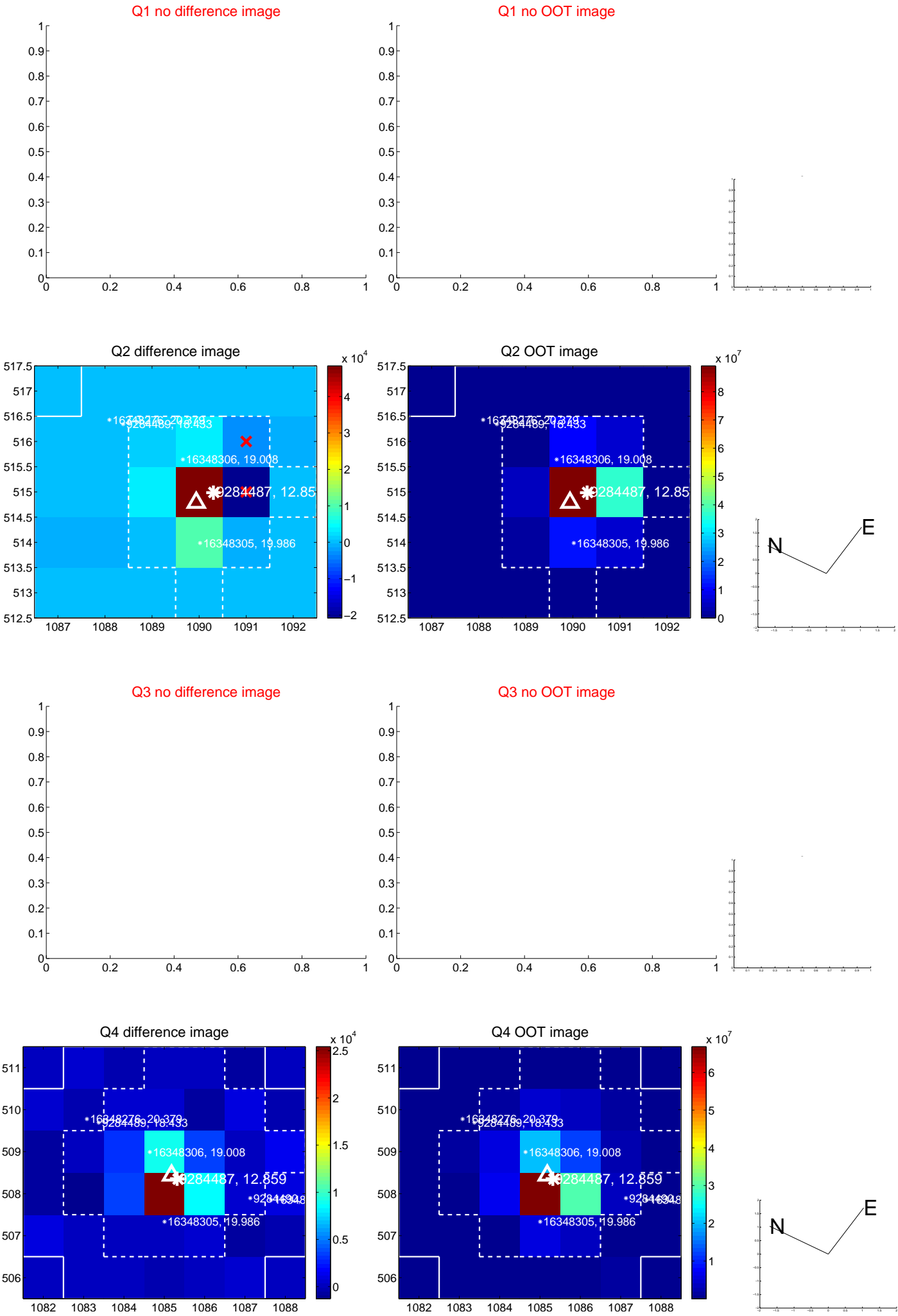
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.683 ± 0.514	1.33	0.581 ± 0.583	0.361 ± 0.262
PRF-fit source offset from KIC position	0.676 ± 0.485	1.39	0.538 ± 0.576	0.410 ± 0.266
photometric centroid source offset	0.34 ± 0.77	0.44	-0.17 ± 0.76	0.29 ± 0.77

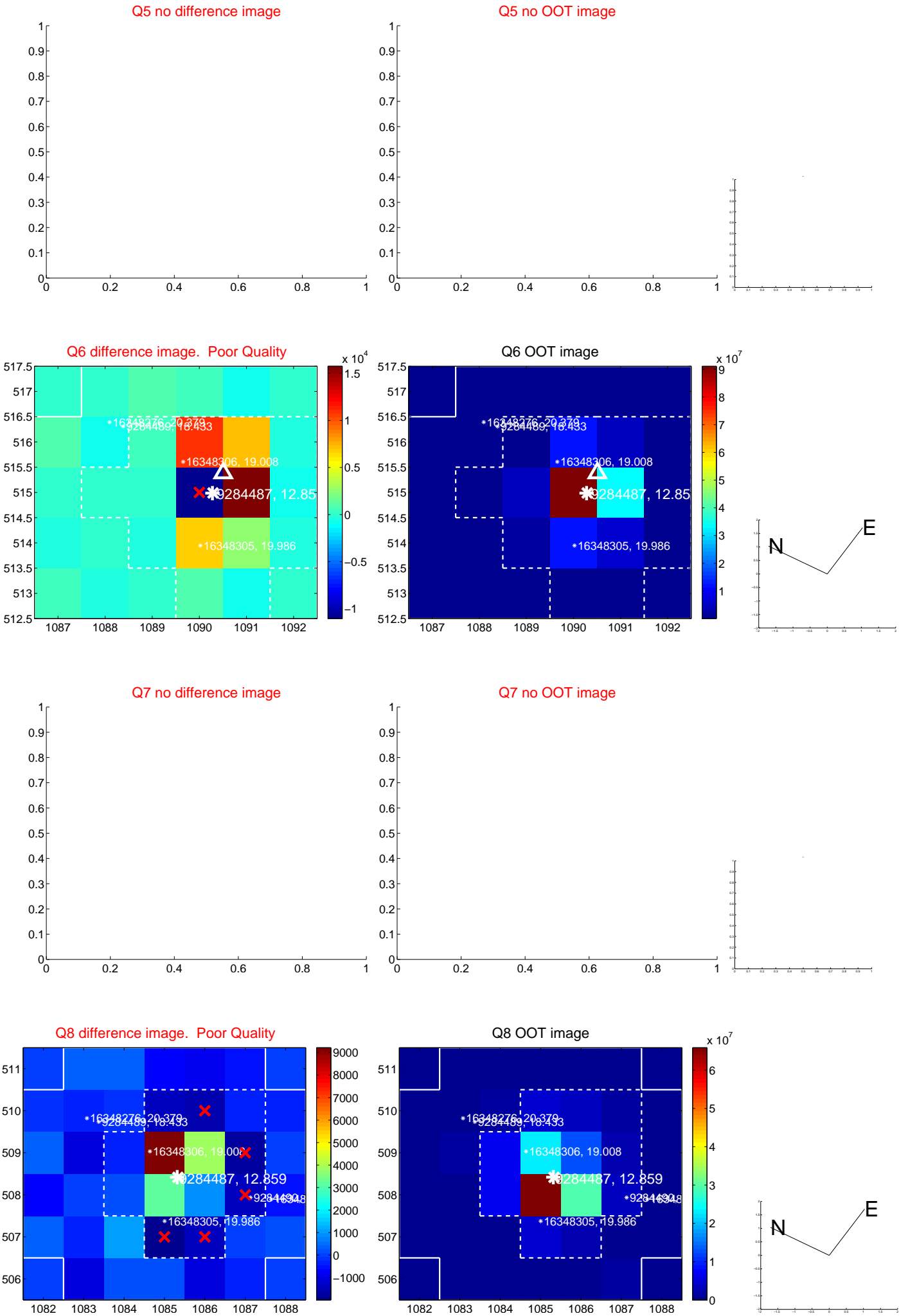


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

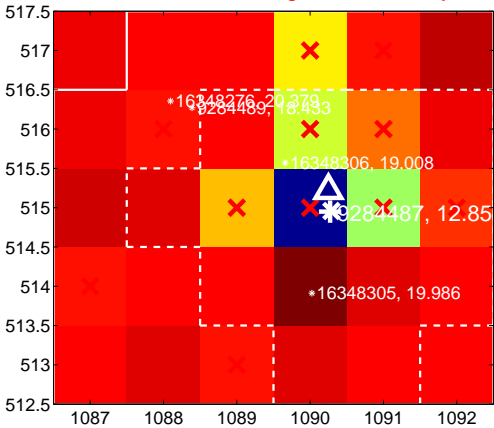
Q9 no difference image



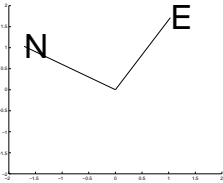
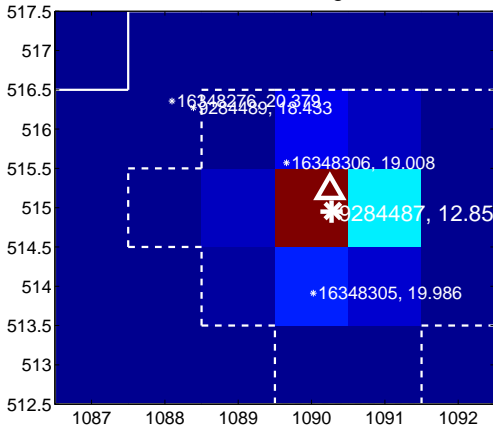
Q9 no OOT image



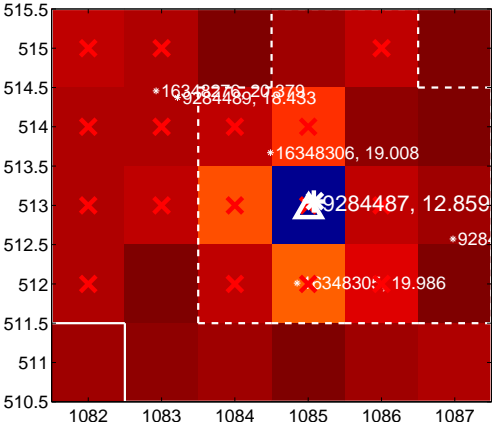
Q10 difference image. Poor Quality



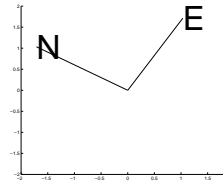
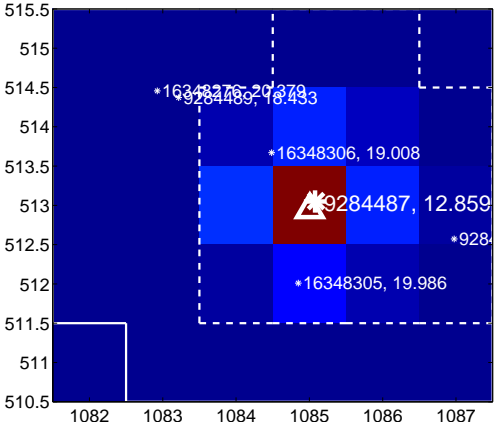
Q10 OOT image



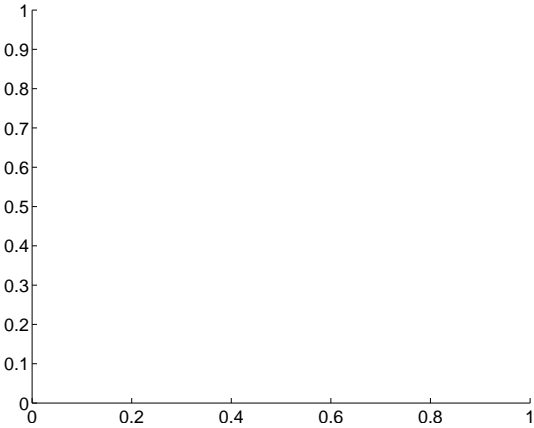
Q11 difference image. Poor Quality



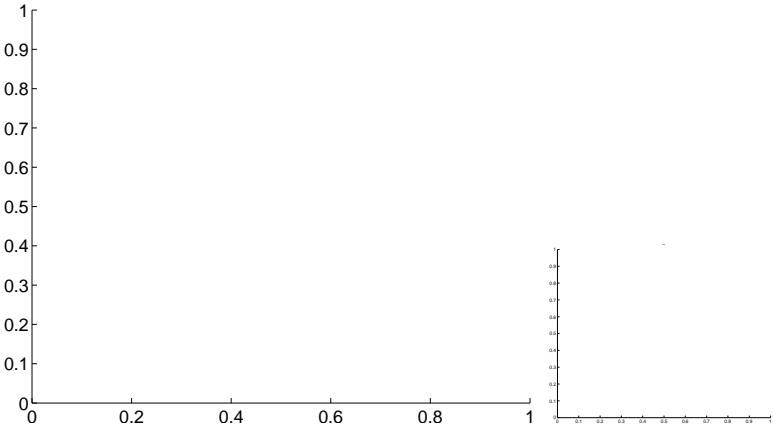
Q11 OOT image



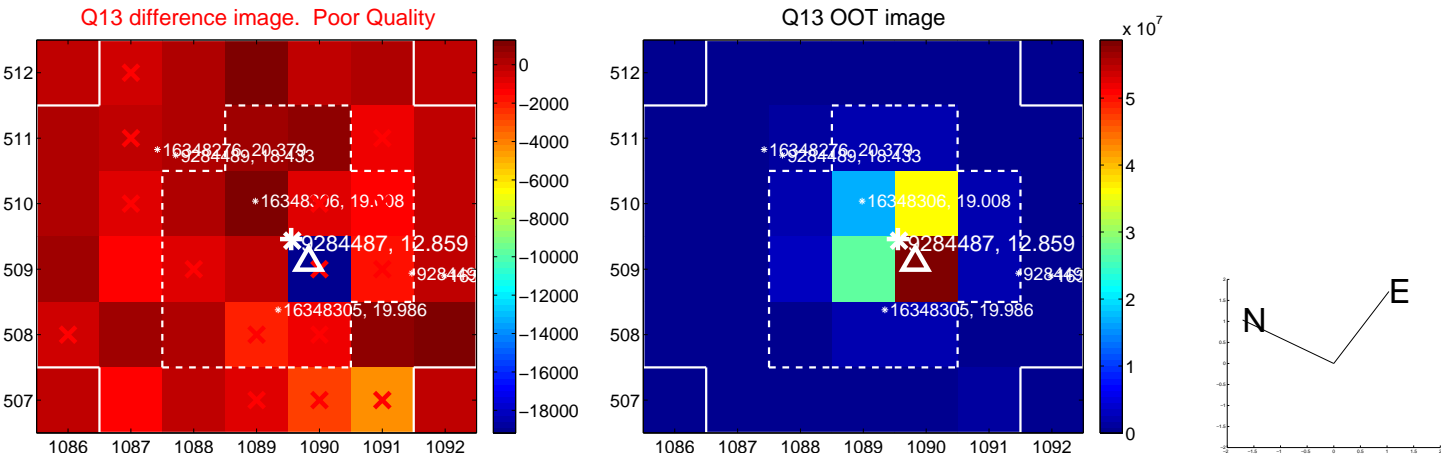
Q12 no difference image



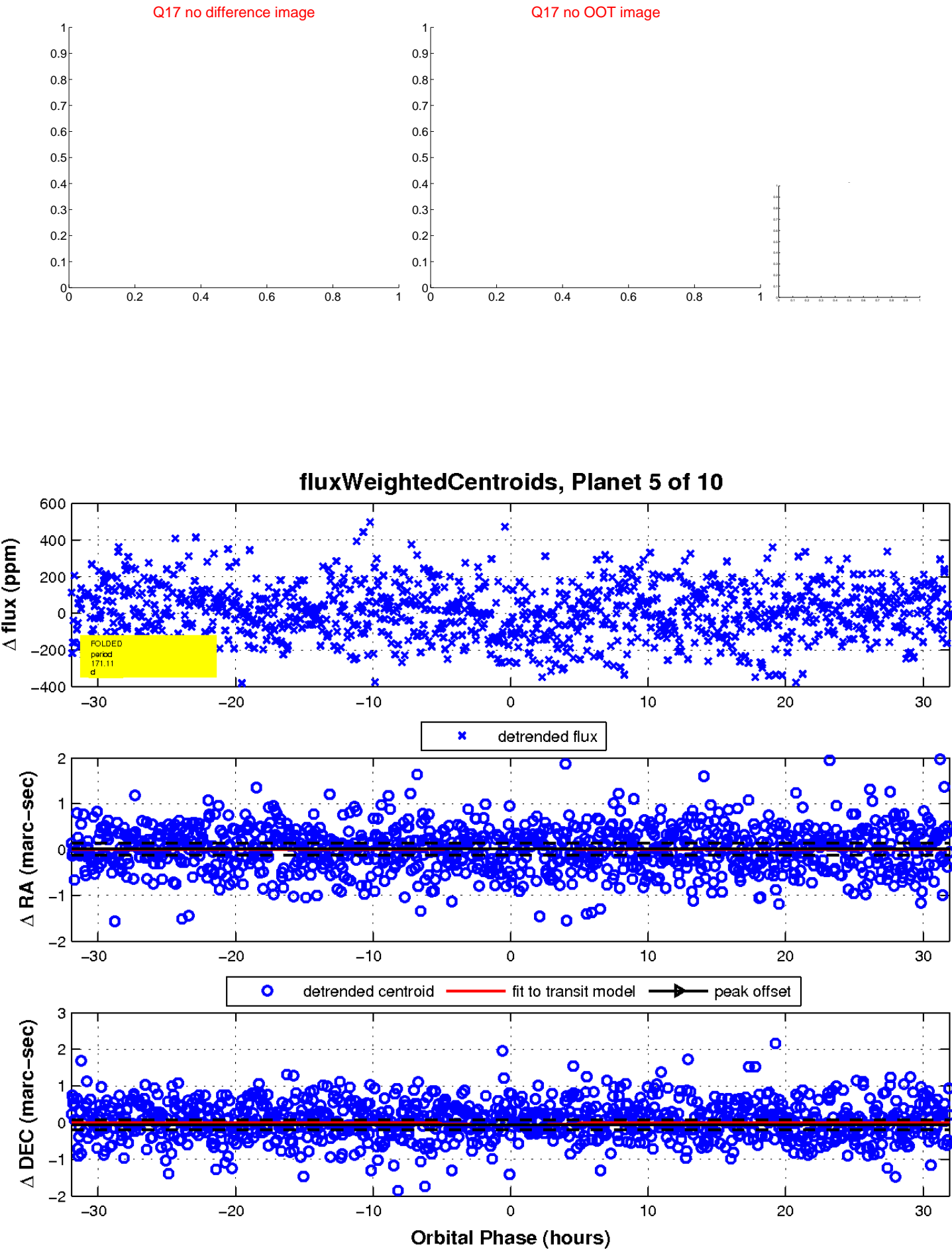
Q12 no OOT image



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

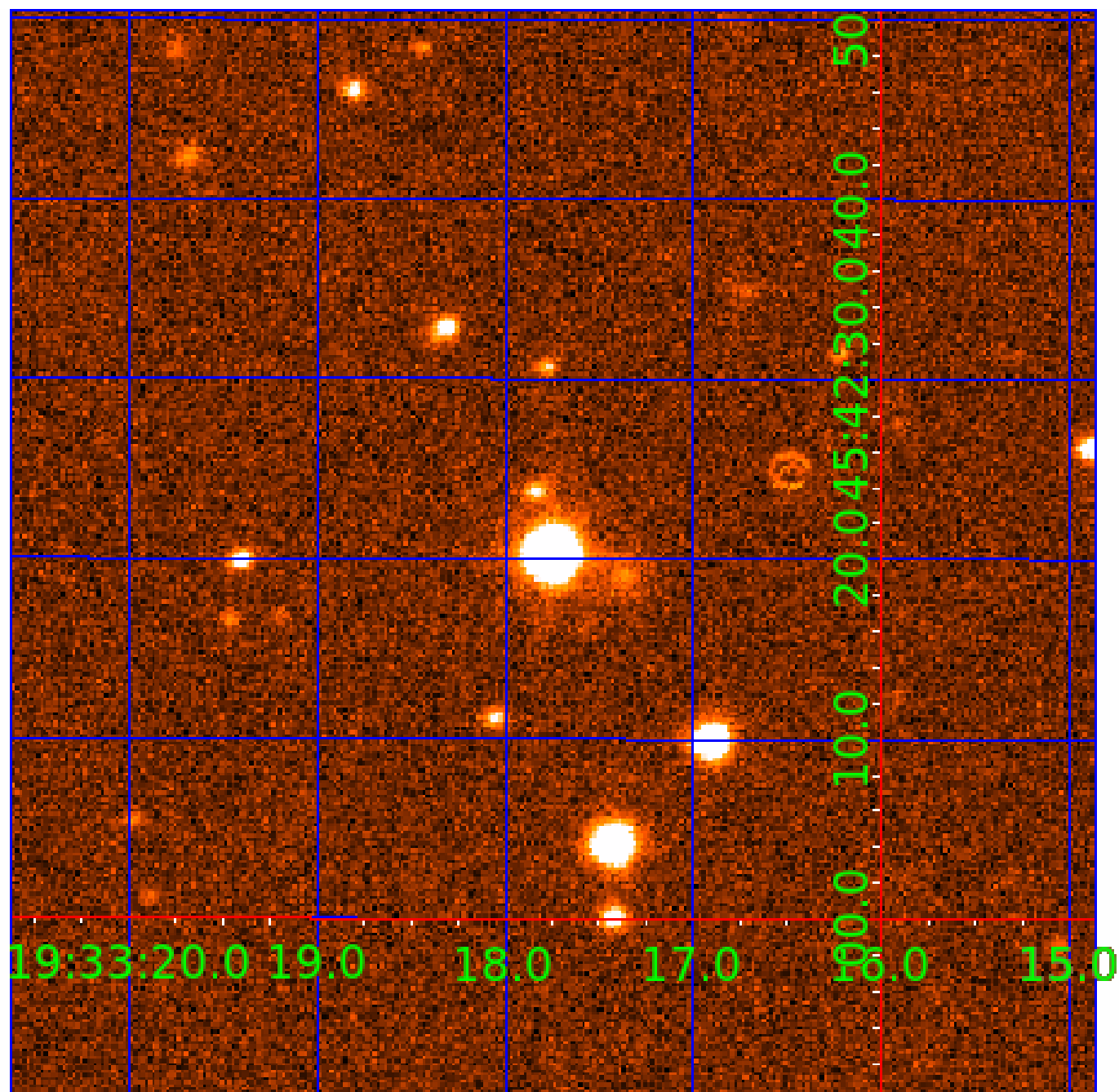


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

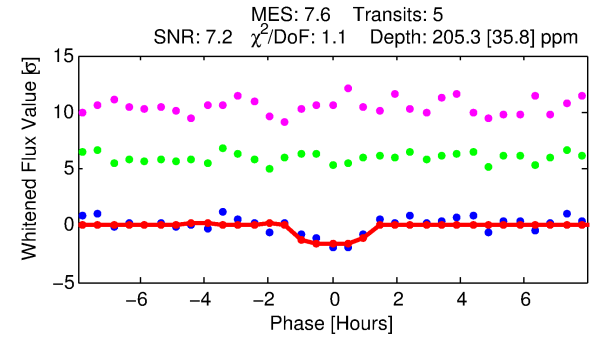
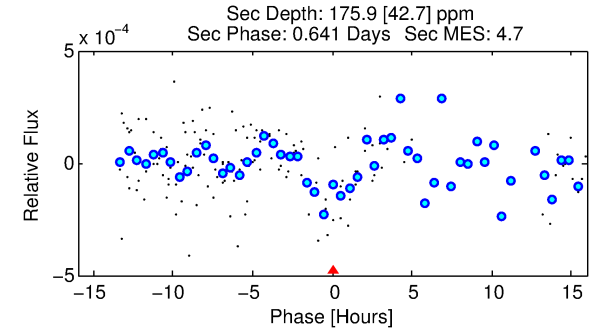
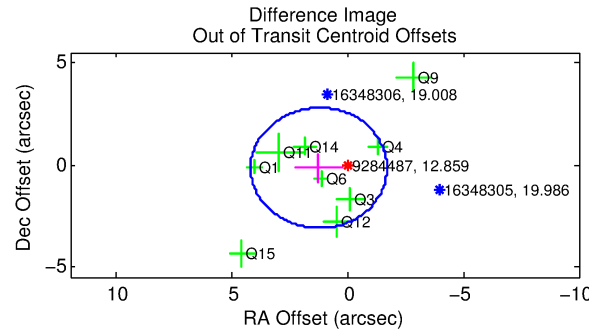
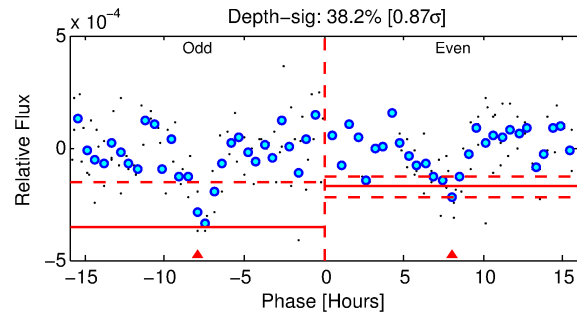
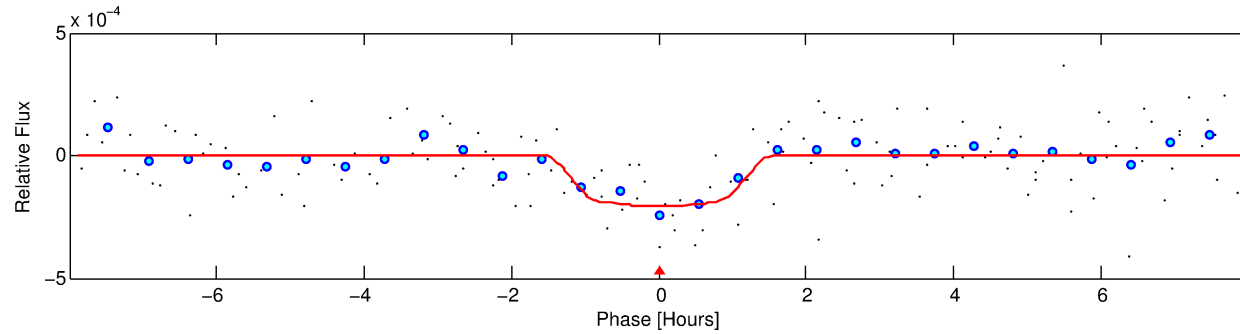
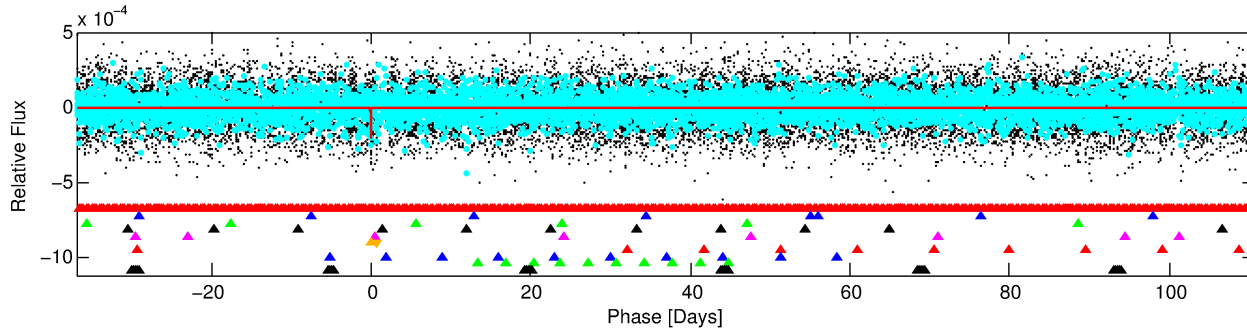
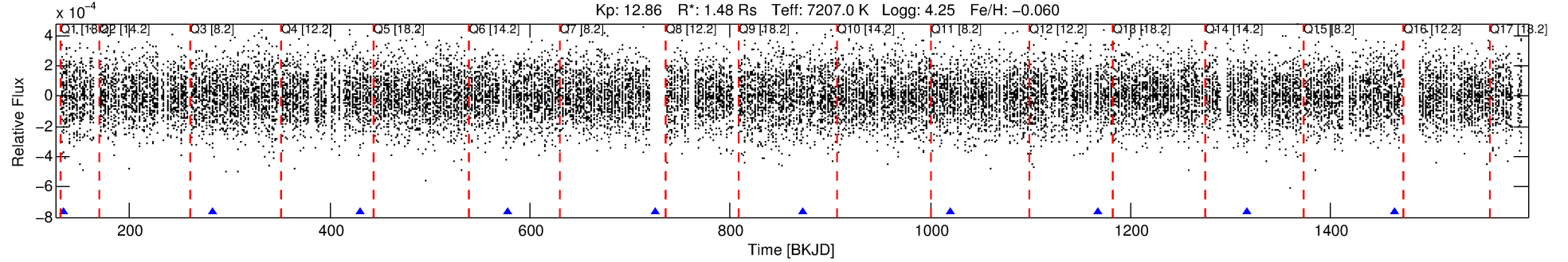
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-06

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 6 of 10 Period: 147.604 d



DV Fit Results:

Period = 147.60441 [0.00136] d
Epoch = 134.7813 [0.0098] BKJD
Rp/R* = 0.0155 [0.0078]
a/R* = 183.91 [576.66]
b = 0.92 [0.54]
Seff = 13.93 [5.81]
Teq = 493 [51] K
Rp = 2.50 [1.53] Re
a = 0.6165 [0.1723] AU
Ag = 5904.99 [6535.69] [0.90σ]
Teffp = 6677 [1749] K [3.54σ]

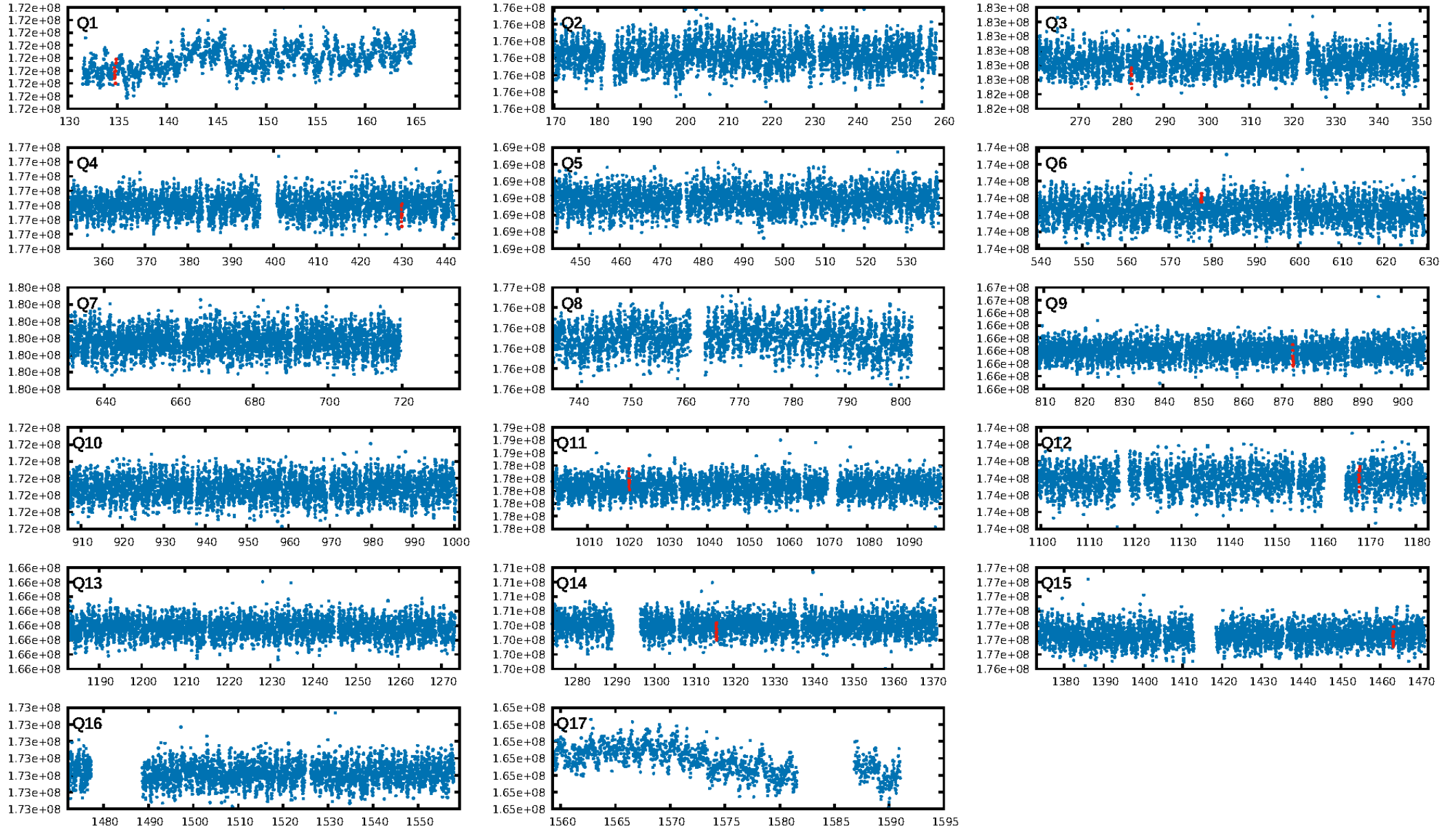
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [25.76σ]
LongPeriod-sig: 100.0% [15.01σ]
ModelChiSquare2-sig: 73.8%
ModelChiSquareGof-sig: 87.2%
Bootstrap-pfa: 1.80e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 7.761
Centroid-sig: 2.5%
Centroid-so: 2.171 arcsec [1.90σ]
OotOffset-rm: 1.261 arcsec [1.28σ]
KicOffset-rm: 1.176 arcsec [1.16σ]
OotOffset-st: 2/3/2/2 [9]
KicOffset-st: 2/3/2/2 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.78 [7/9]

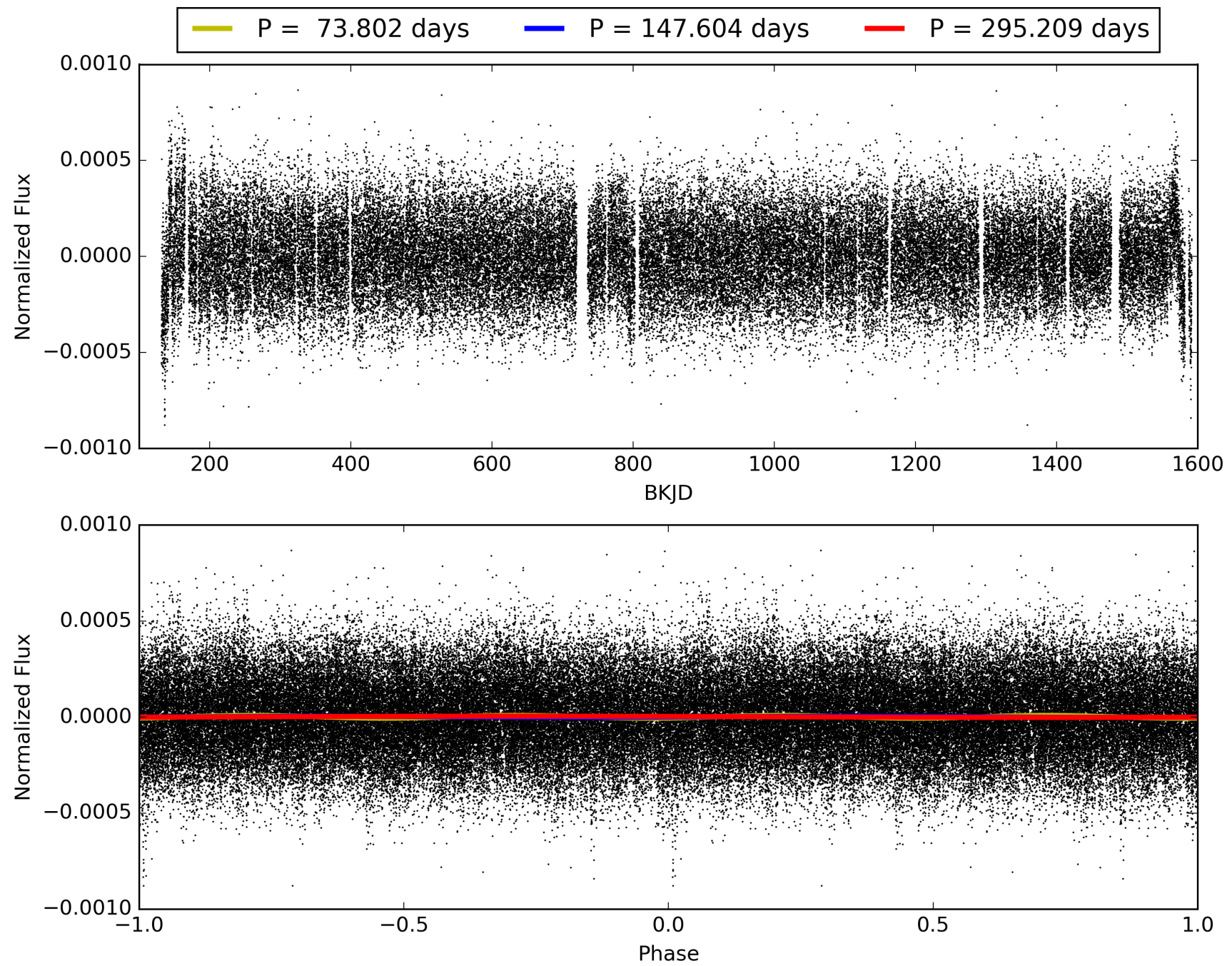
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:40:13 Z

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

TCE 009284487-06, PDC Light Curves

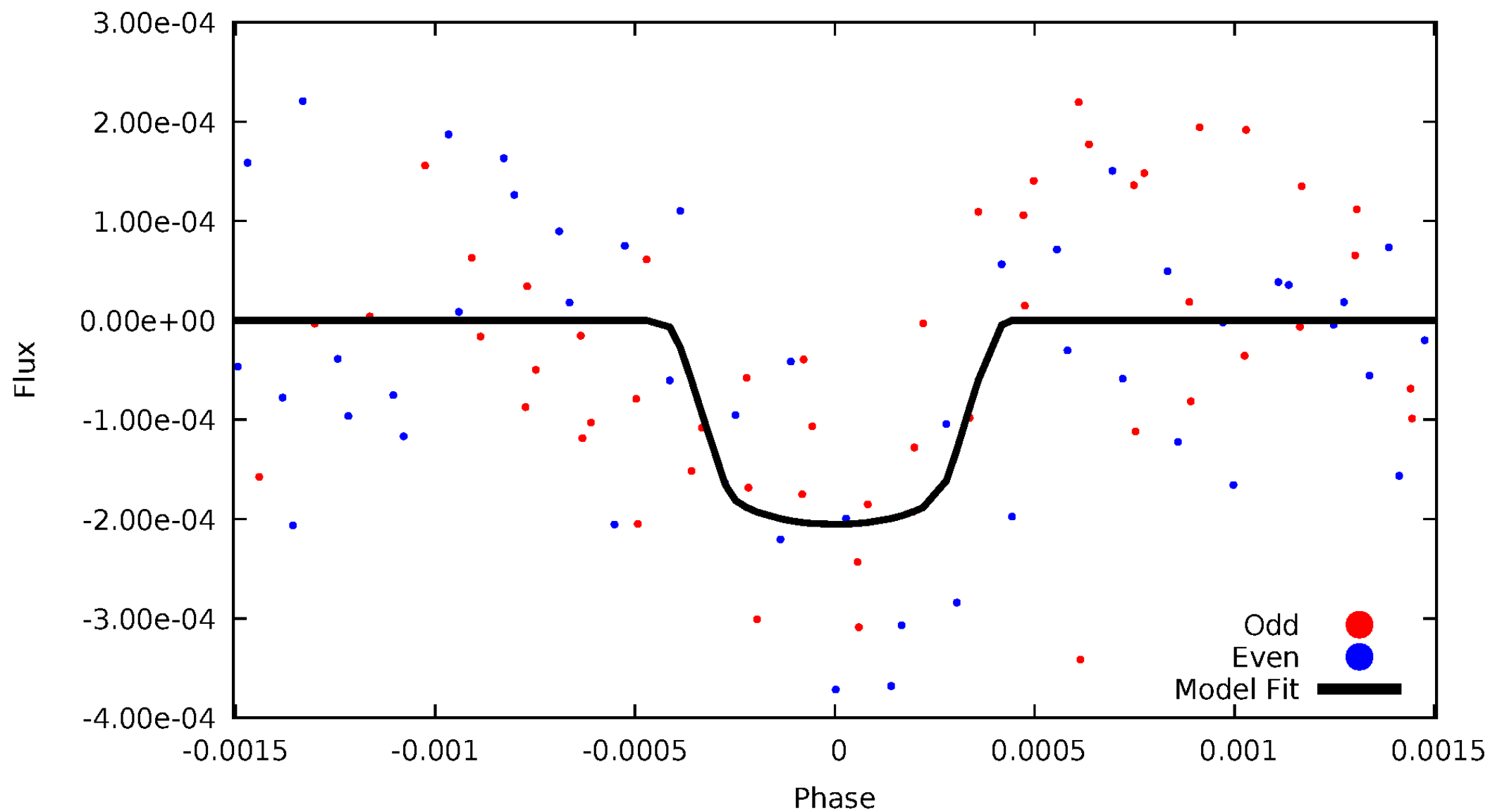


TCE 009284487-06



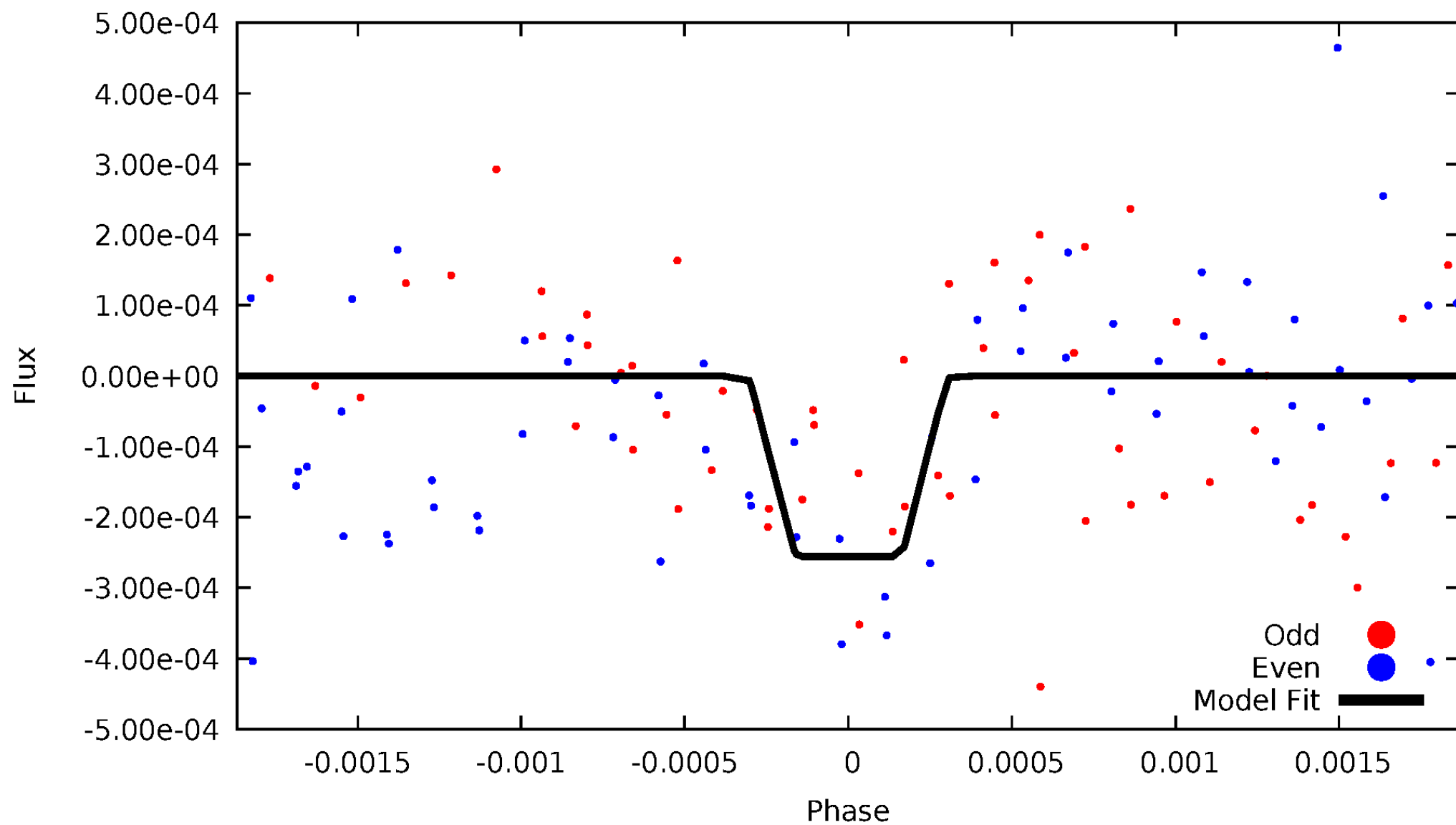
DV Odd/Even

TCE 009284487-06



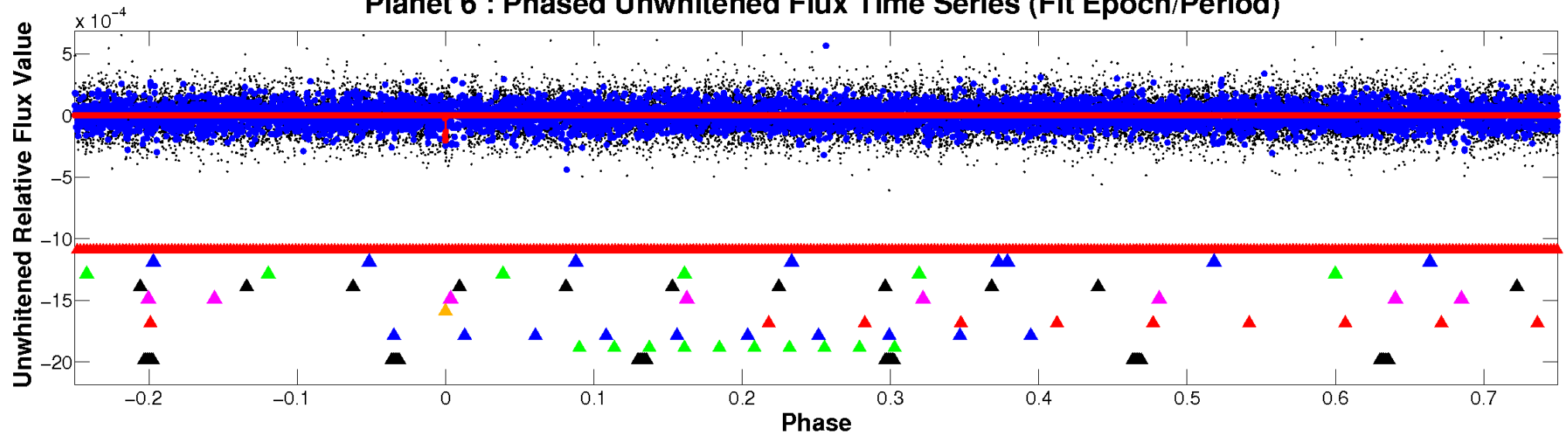
ALT Odd/Even

TCE 009284487-06

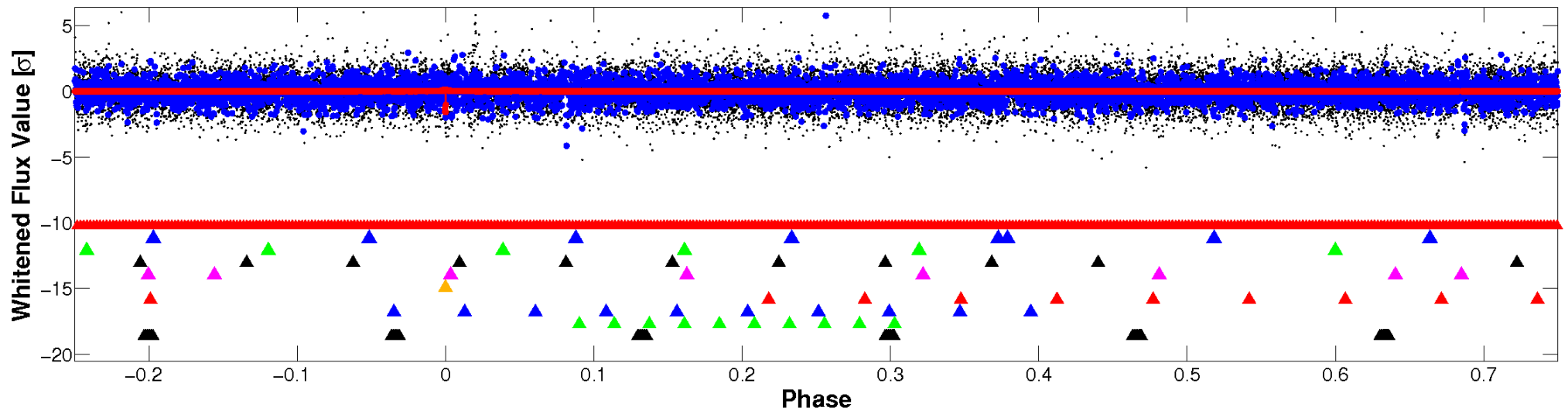


Non-Whitened Vs. Whitened Light Curve

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

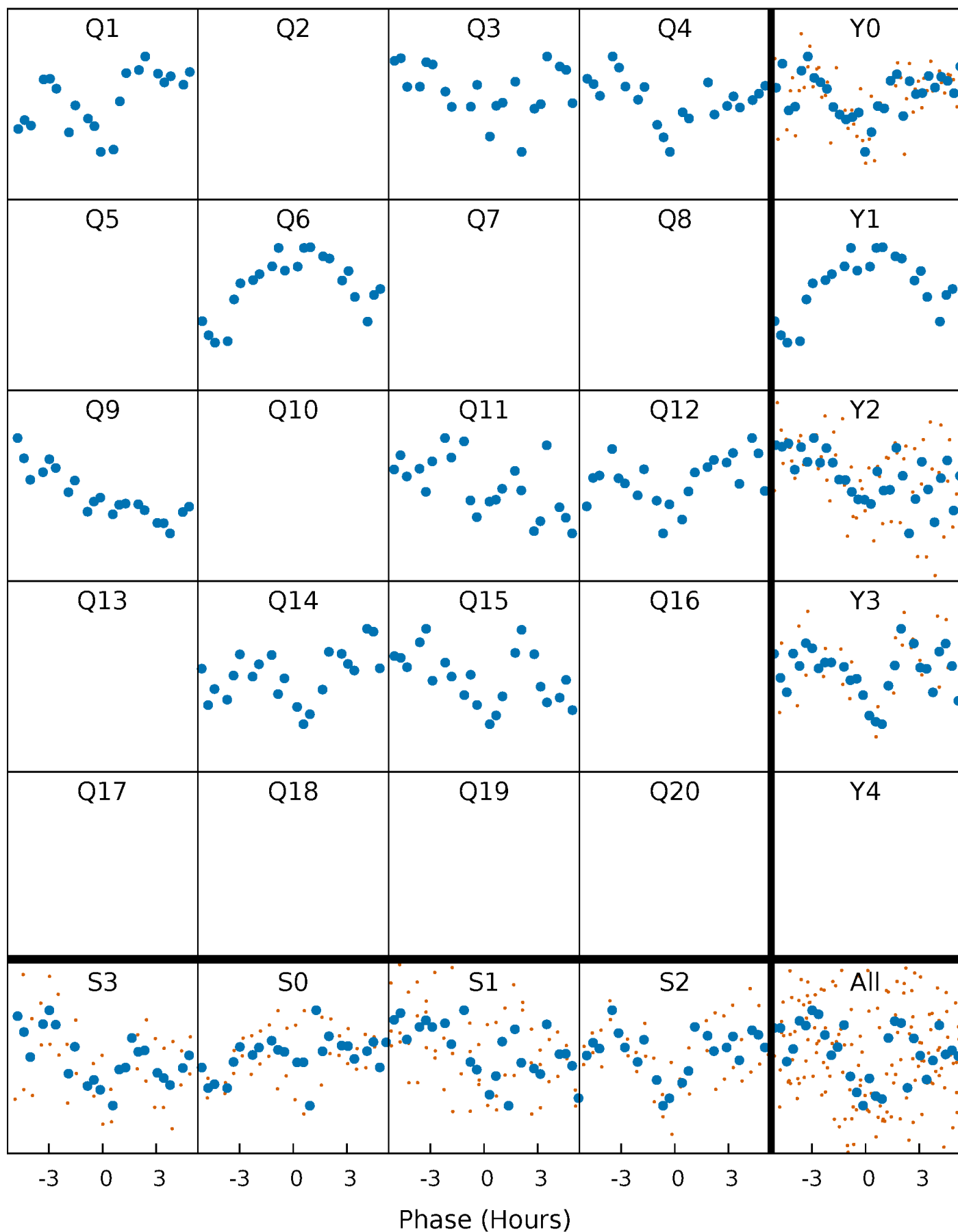


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



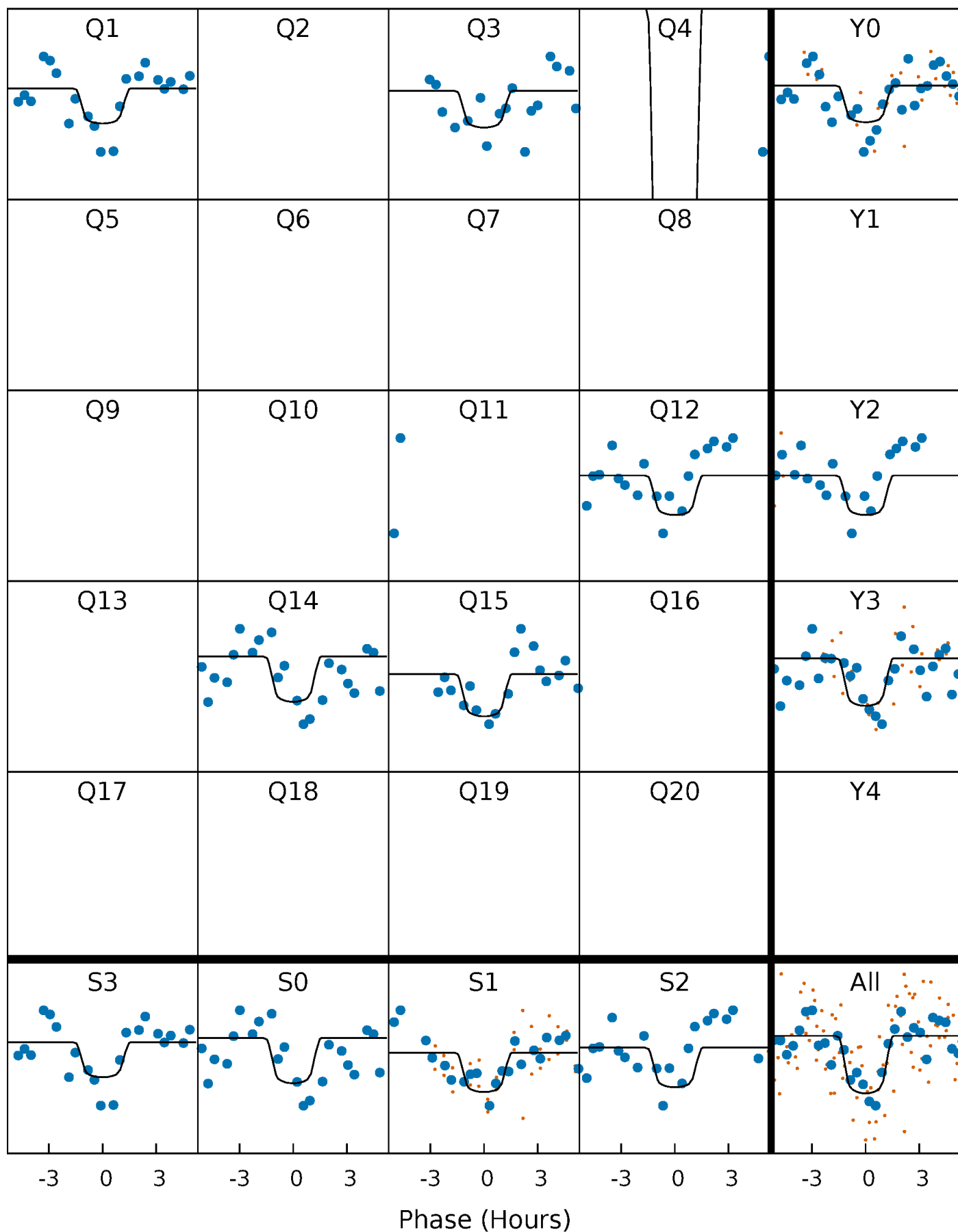
PDC Quarter-Phased Transit Curves

TCE 009284487-06 P=147.604406 Days $T_0=134.781297$ (BKJD)



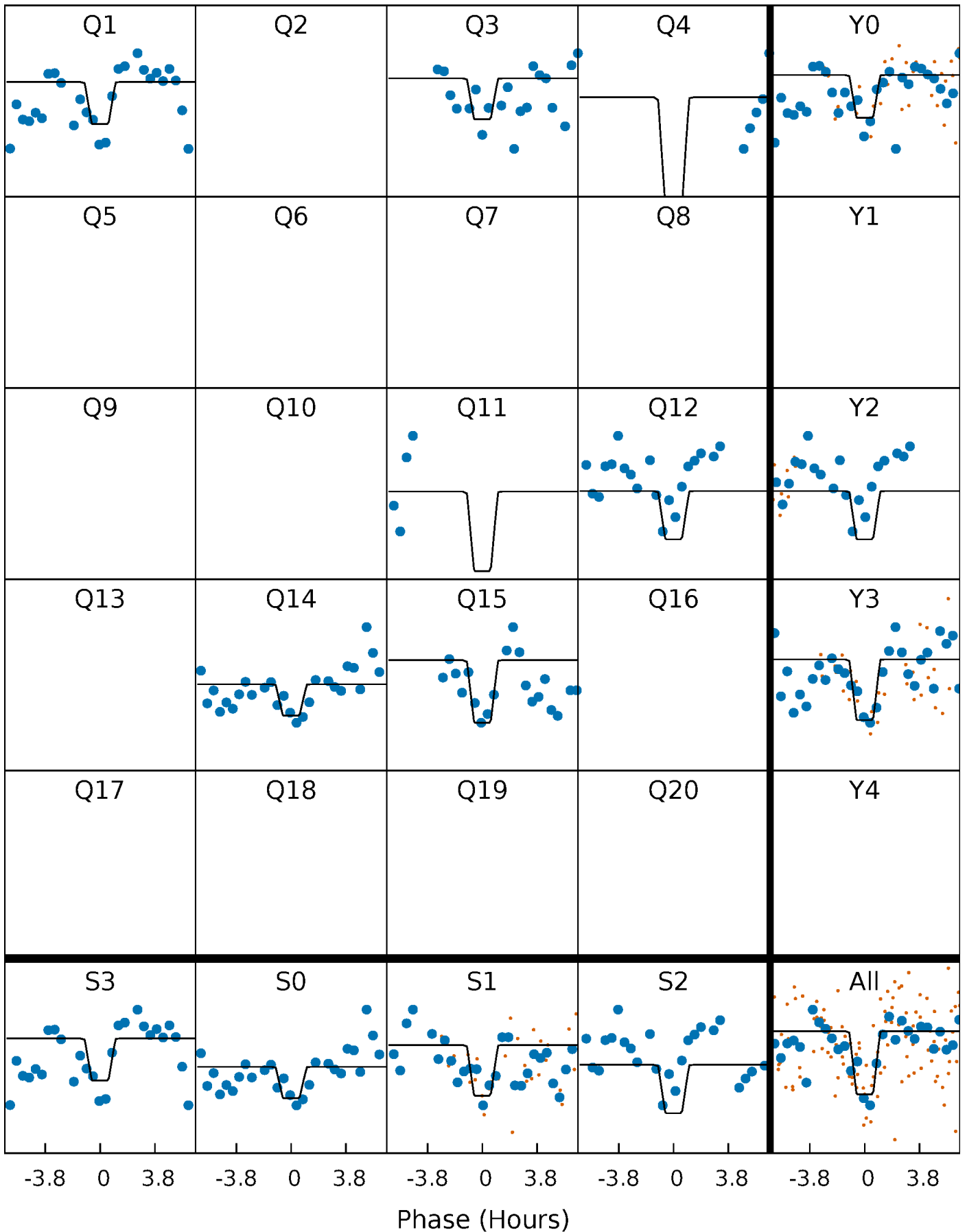
DV Quarter-Phased Transit Curves

TCE 009284487-06 P=147.604406 Days $T_0=134.781297$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

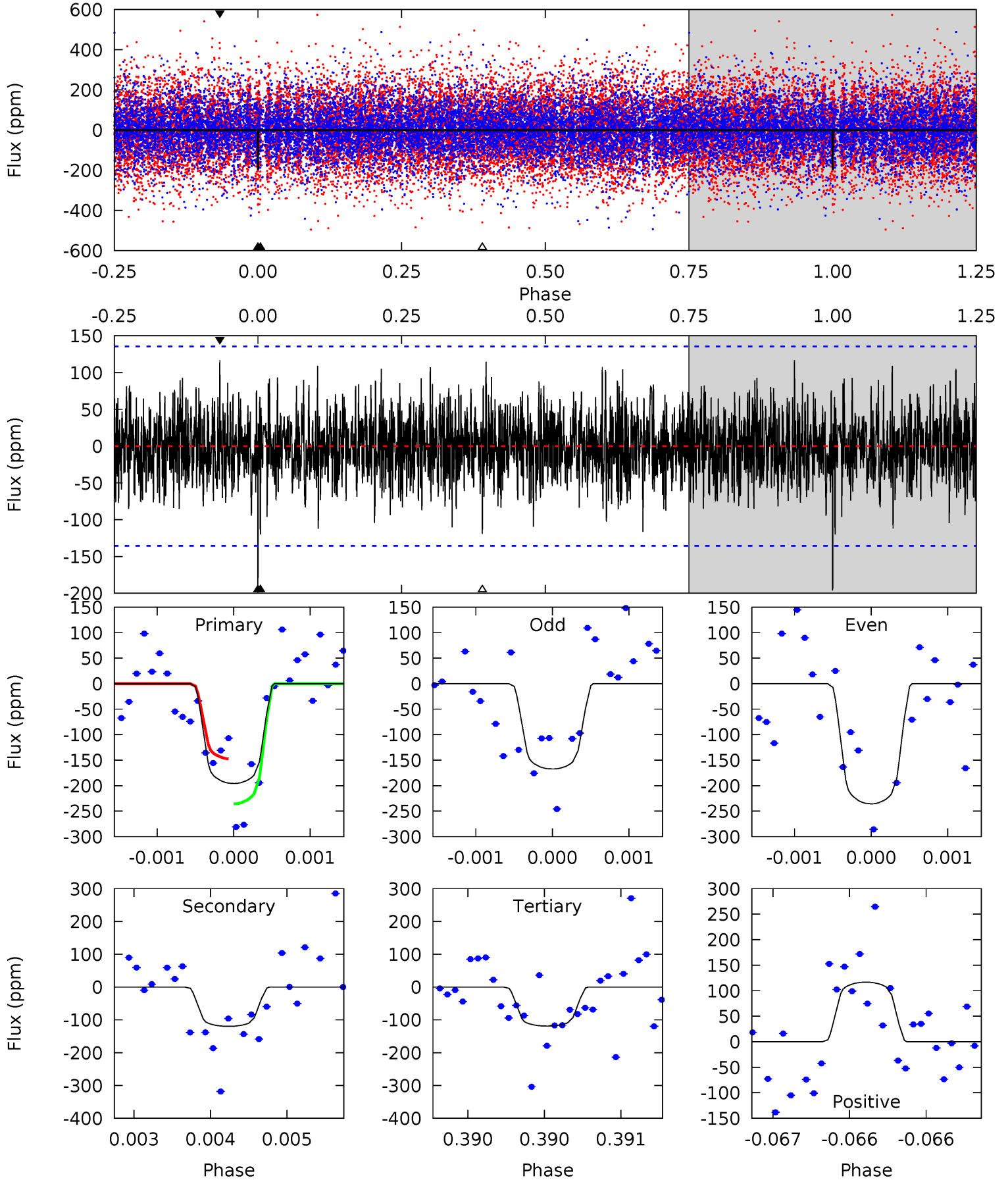
TCE 009284487-06 P=147.605000 Days $T_0=134.784651$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-06, P = 147.604406 Days, E = 134.781297 Days

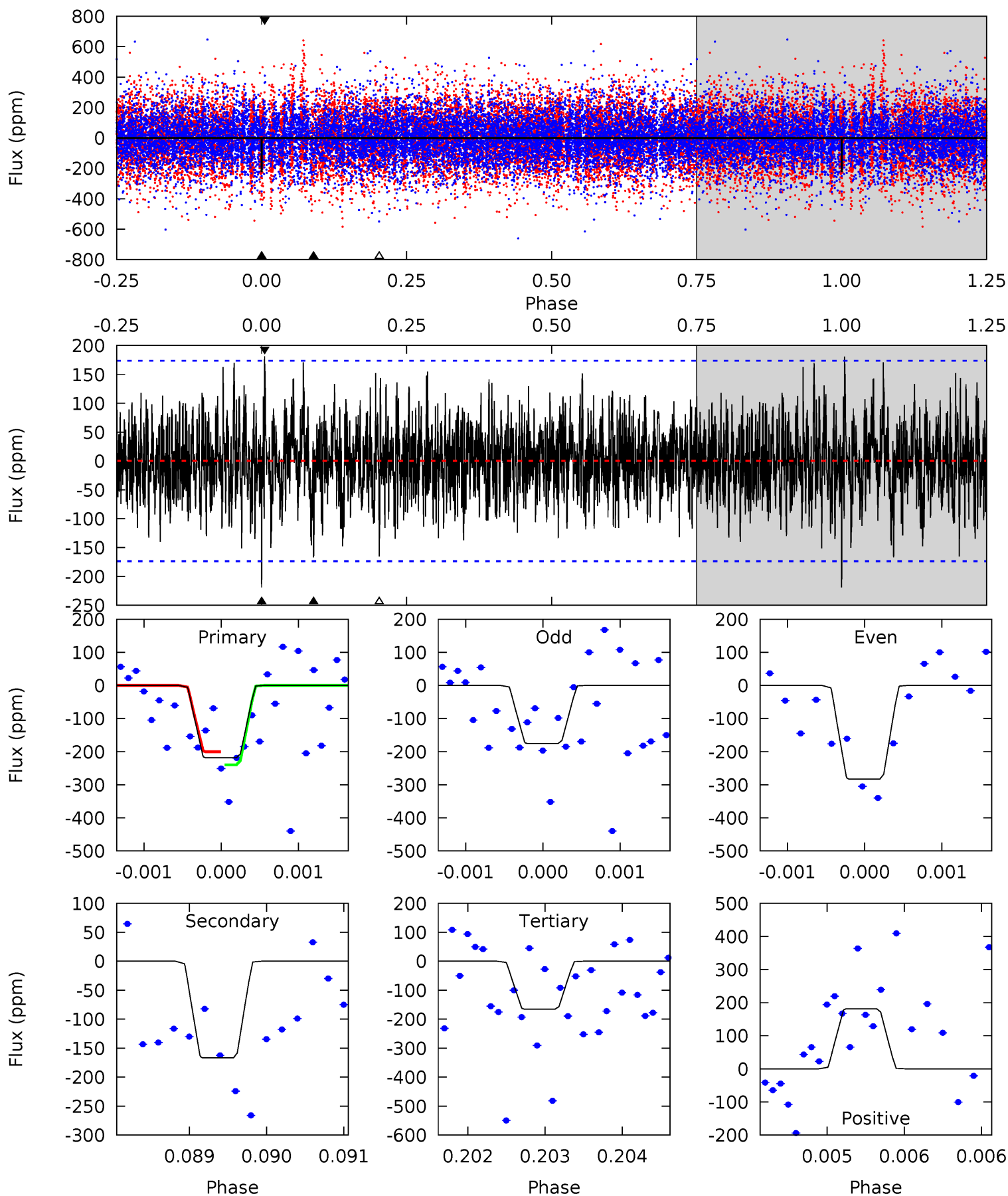
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.92	4.85	4.81	4.72	5.48	3.34	1.42	3.10	3.20	0.03	0.12	1.35	1.05	0.37	1.78



Alt Model-Shift Uniqueness Test

009284487-06, P = 147.605000 Days, E = 134.784651 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.95	5.30	5.25	5.75	5.52	3.39	1.60	1.70	1.20	0.05	-0.45	1.67	0.98	0.45	0.63



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-120 ± 25	$2.59^{+1.37}_{-1.30}$	694^{+54}_{-38}	5960^{+2764}_{-1009}	3706^{+10910}_{-2131}
Alt.	-167 ± 31	$2.71^{+1.37}_{-1.26}$	694^{+57}_{-38}	6353^{+2805}_{-1198}	4613^{+12069}_{-2656}

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 $A_{obs} \gg 1.0$

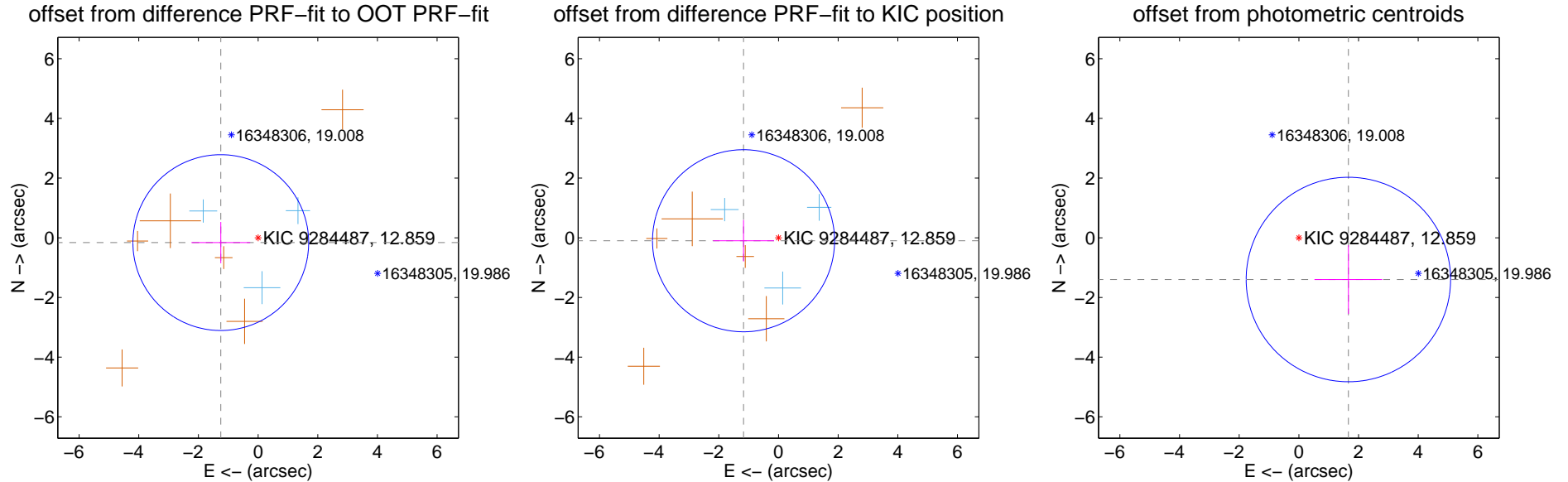
DV Centroid Data

Supplemental centroid analysis for 009284487-06. Kepler magnitude: 12.86. Transit SNR 7.22

There are 3 quarters with good PRF difference image offsets

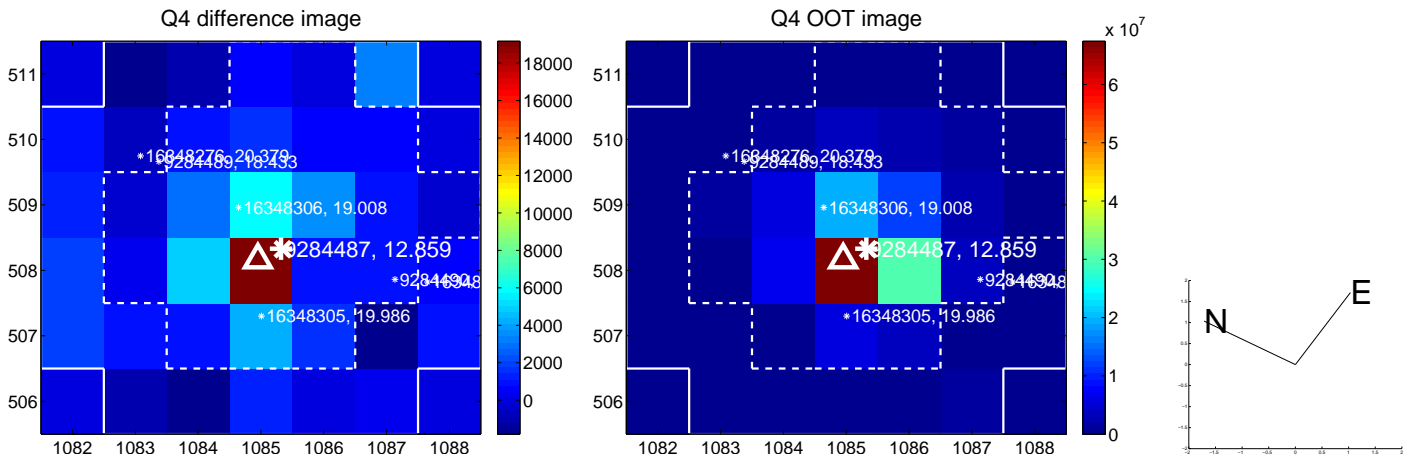
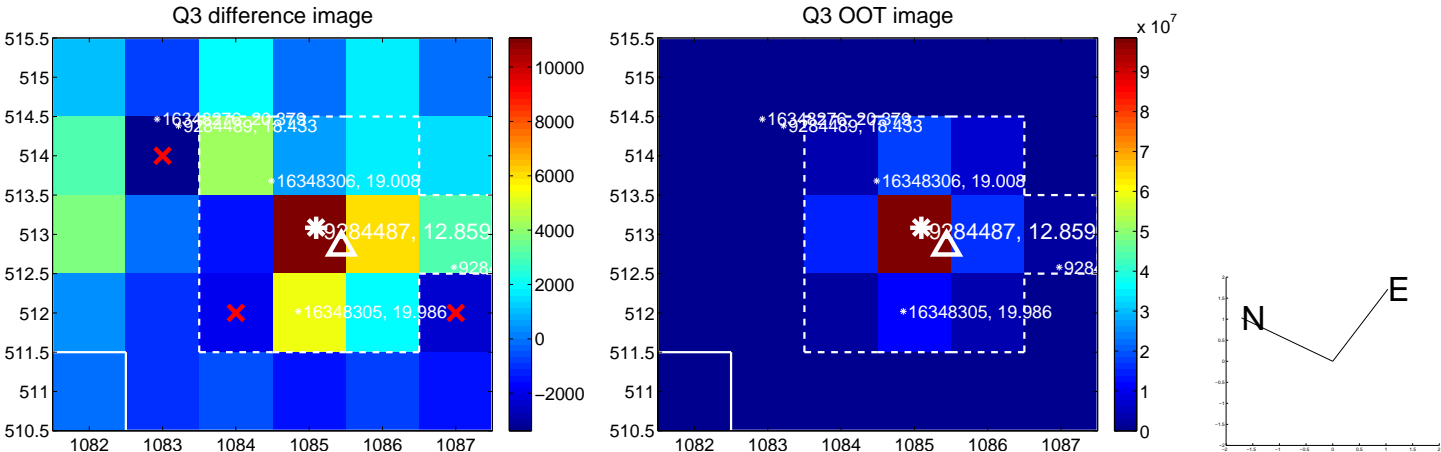
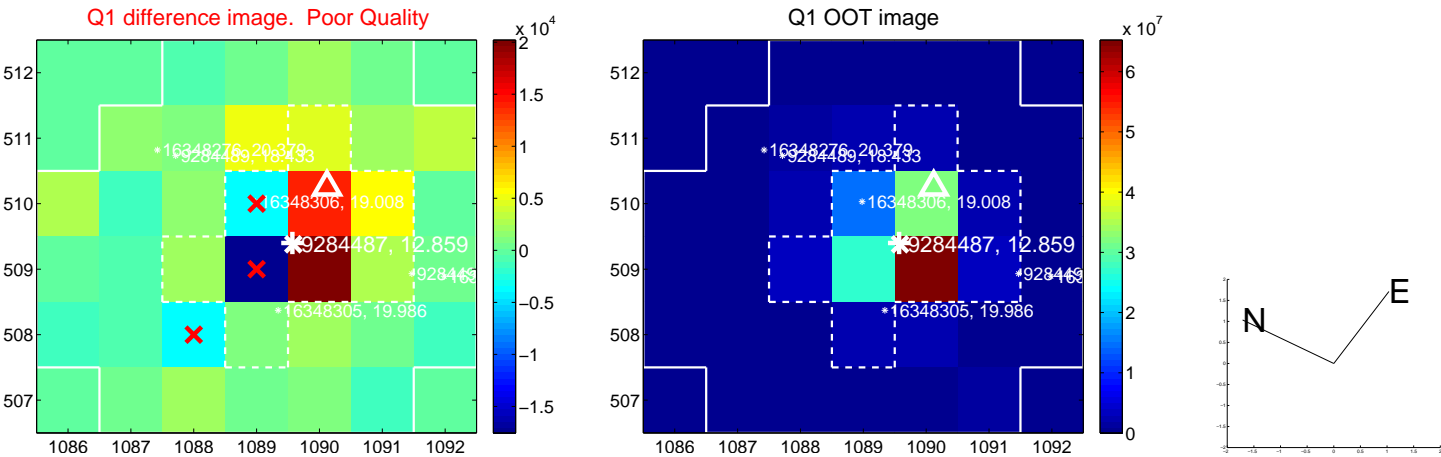
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.261 ± 0.982	1.28	1.251 ± 0.986	-0.162 ± 0.692
PRF-fit source offset from KIC position	1.176 ± 1.017	1.16	1.172 ± 1.019	-0.100 ± 0.695
photometric centroid source offset	2.17 ± 1.14	1.90	-1.66 ± 1.14	-1.40 ± 1.15



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.

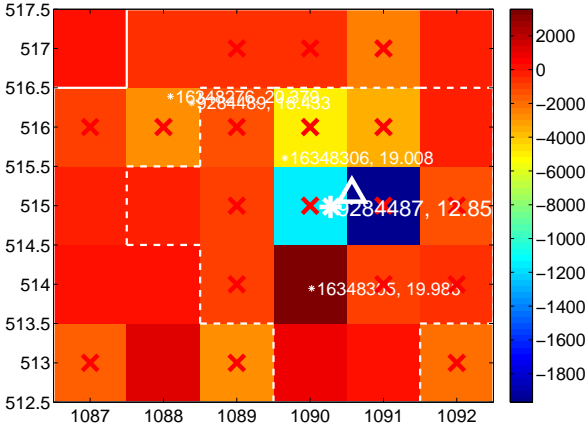
Q5 no difference image



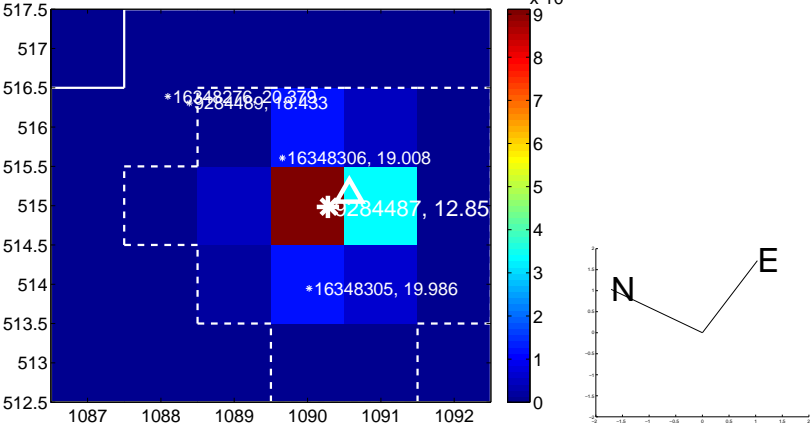
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



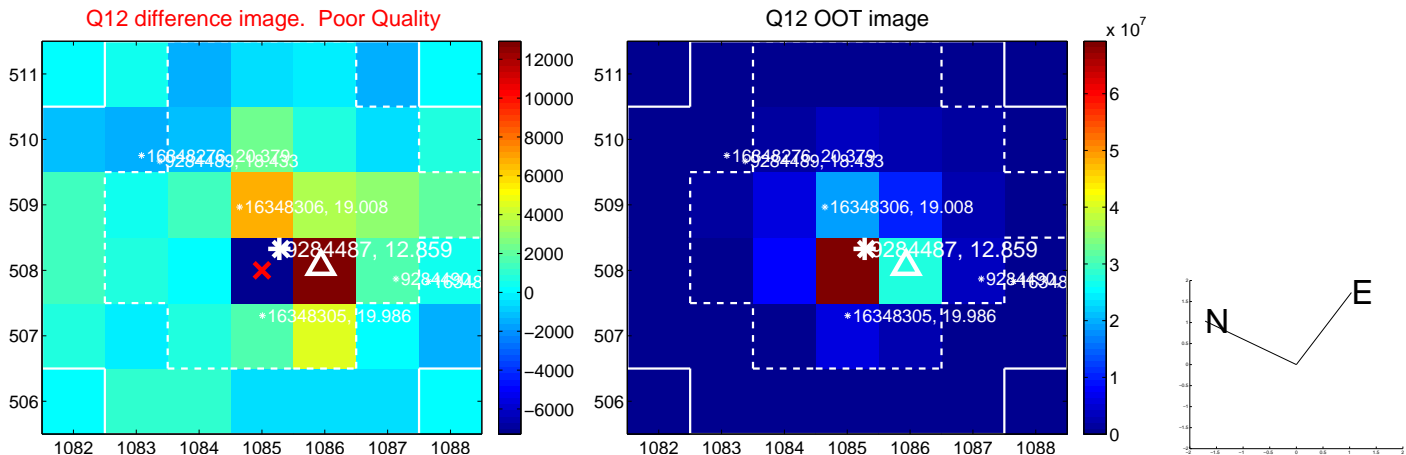
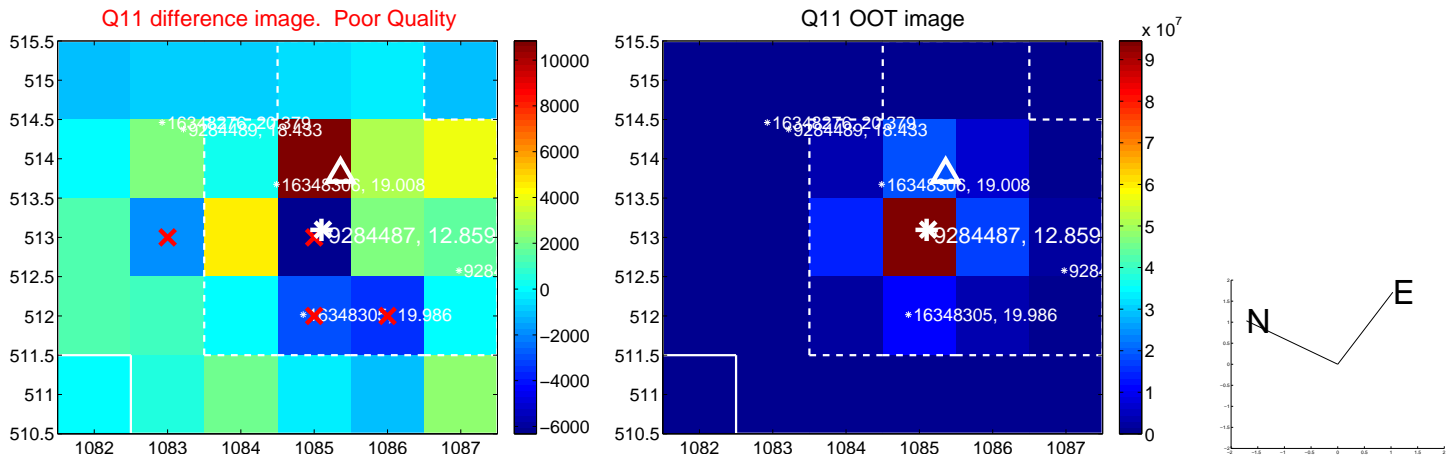
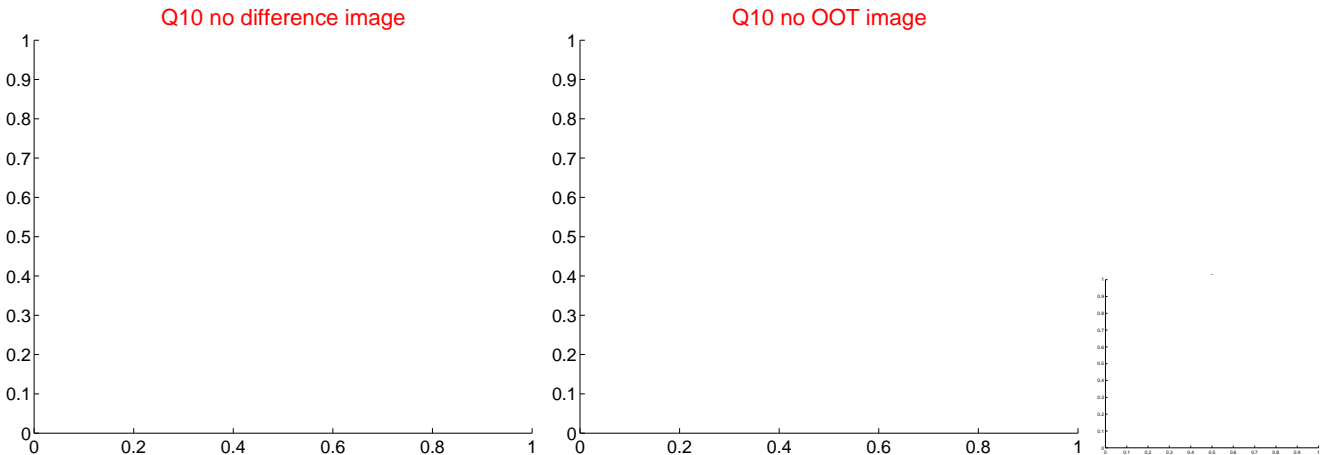
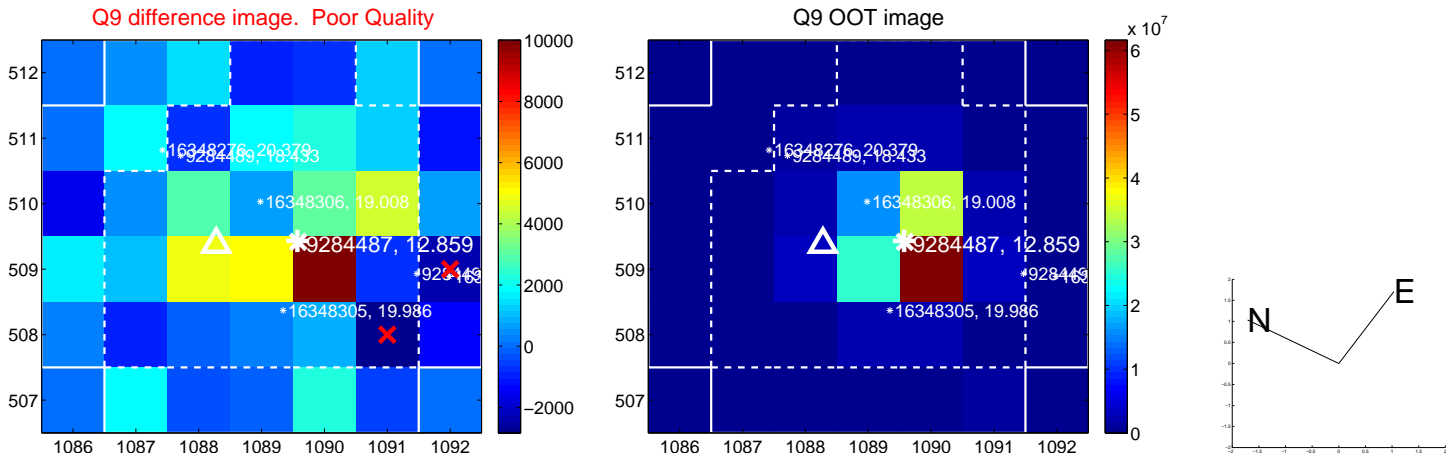
Q8 no difference image



Q8 no OOT image



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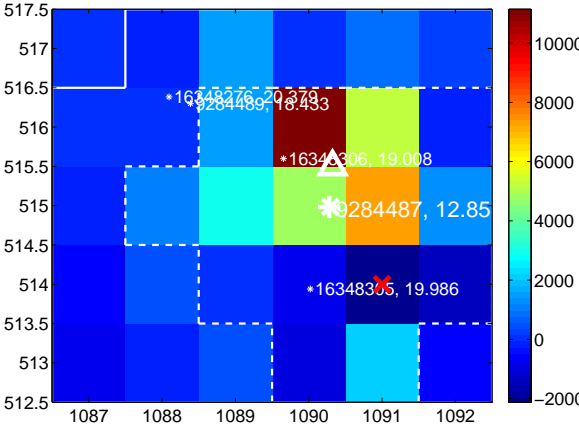
Q13 no difference image



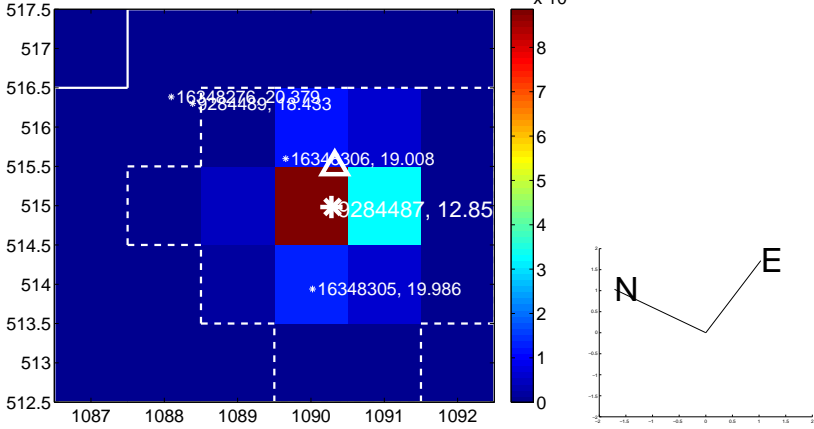
Q13 no OOT image



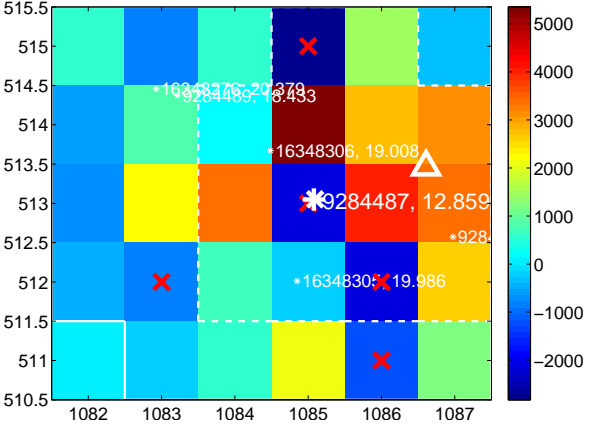
Q14 difference image



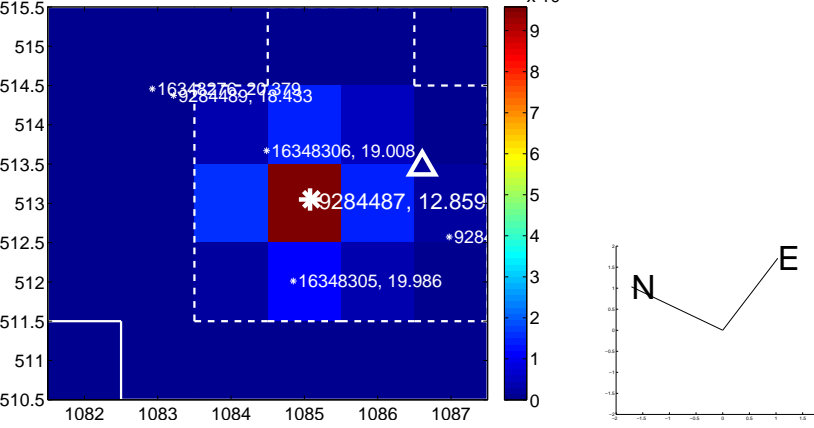
Q14 OOT image



Q15 difference image. Poor Quality



Q15 OOT image



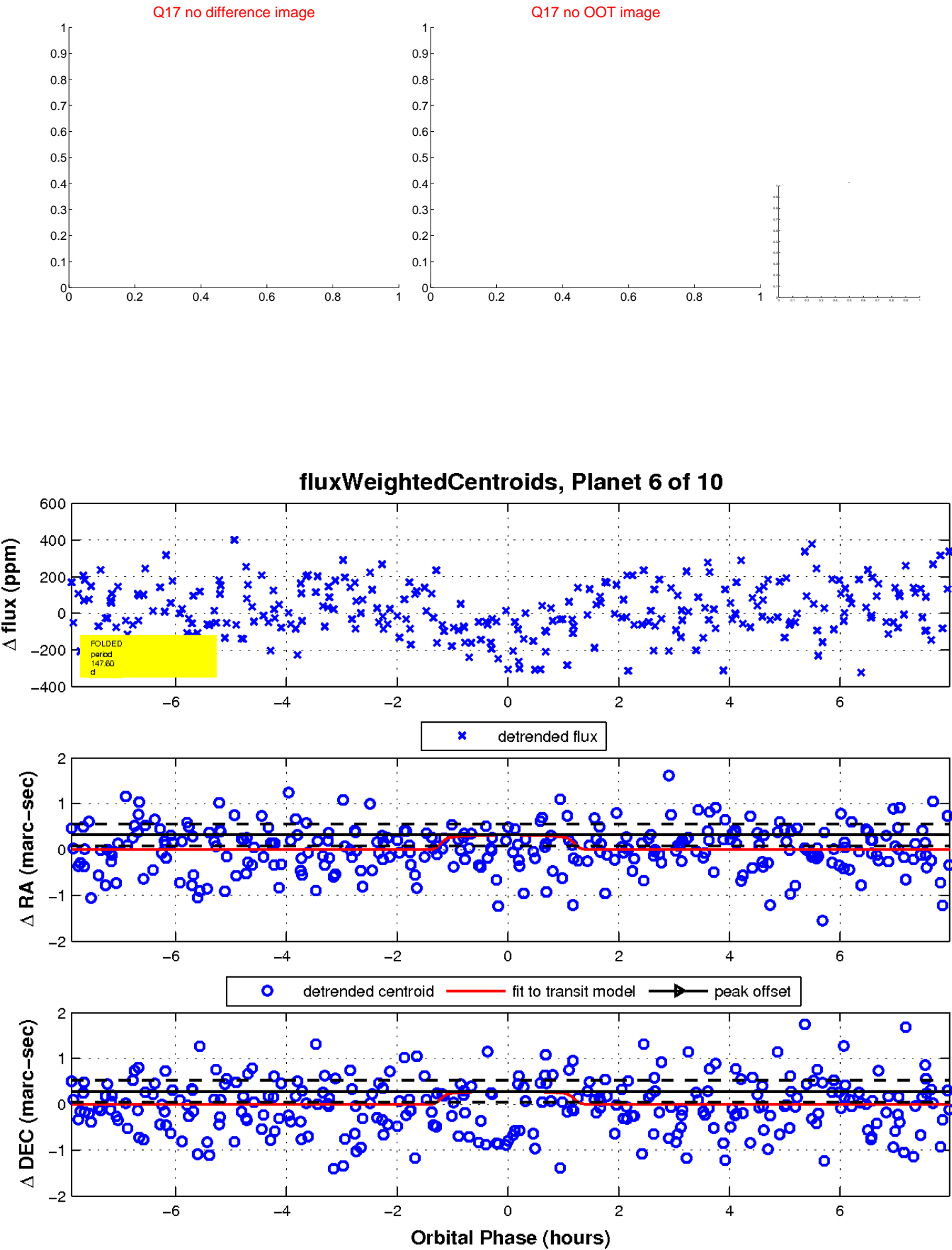
Q16 no difference image



Q16 no OOT image

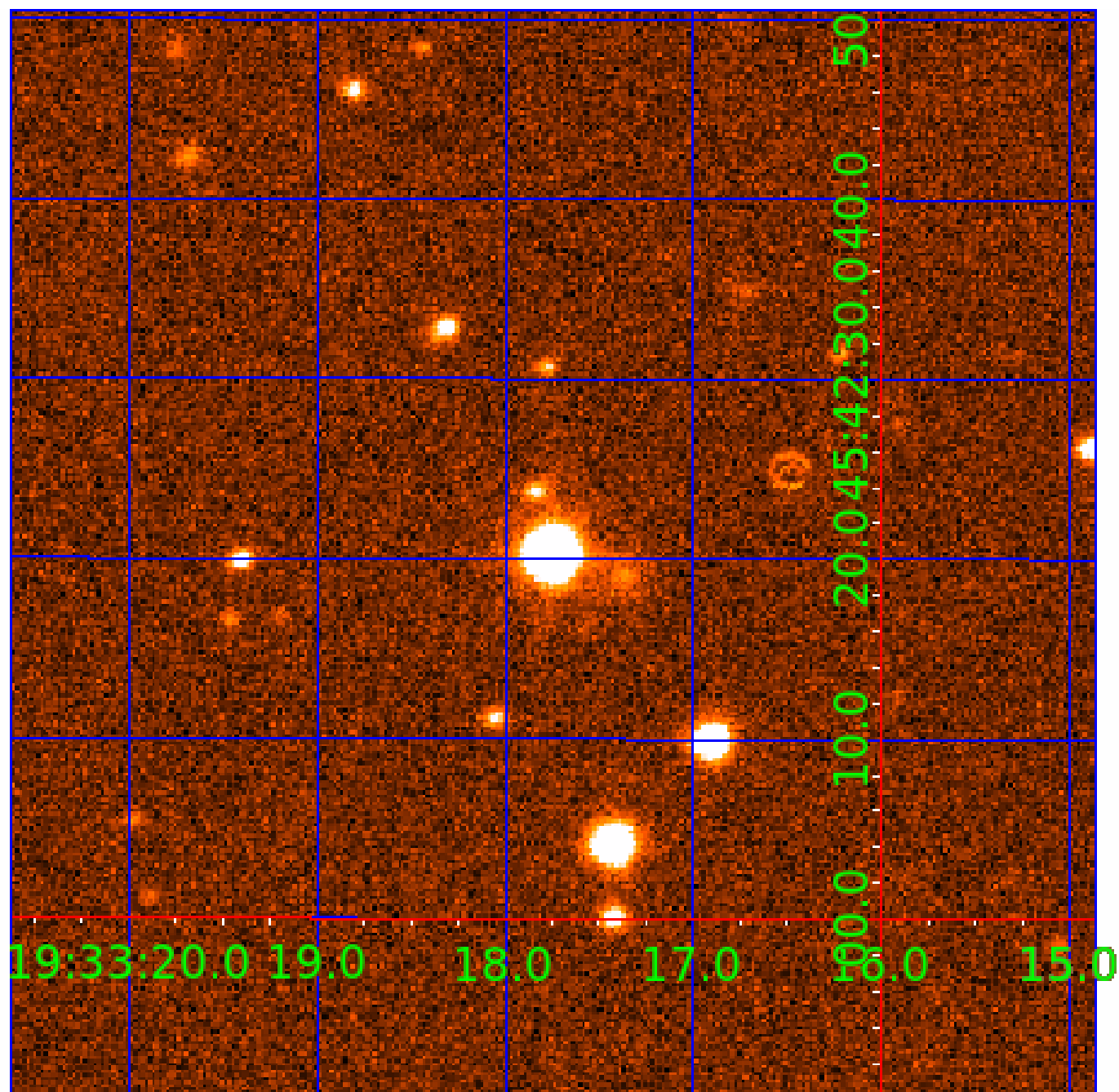


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UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
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009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

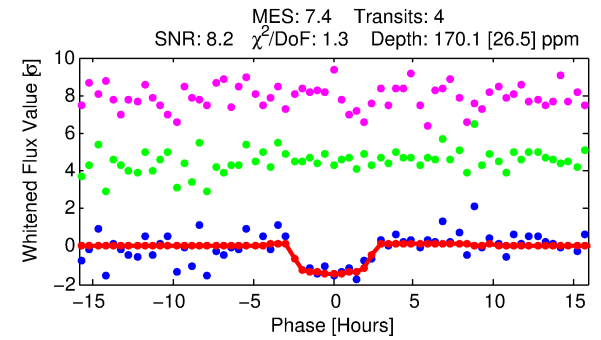
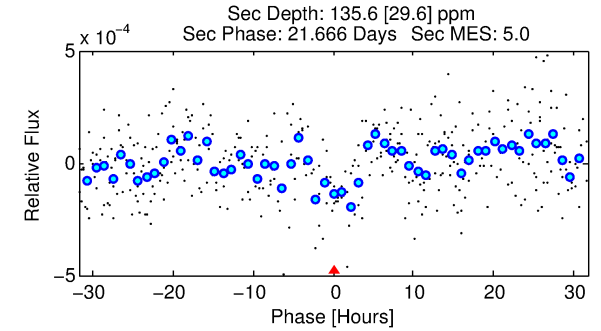
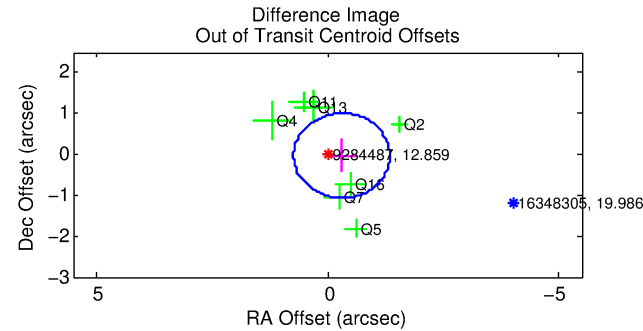
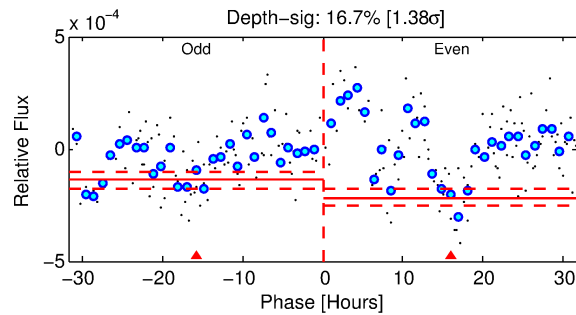
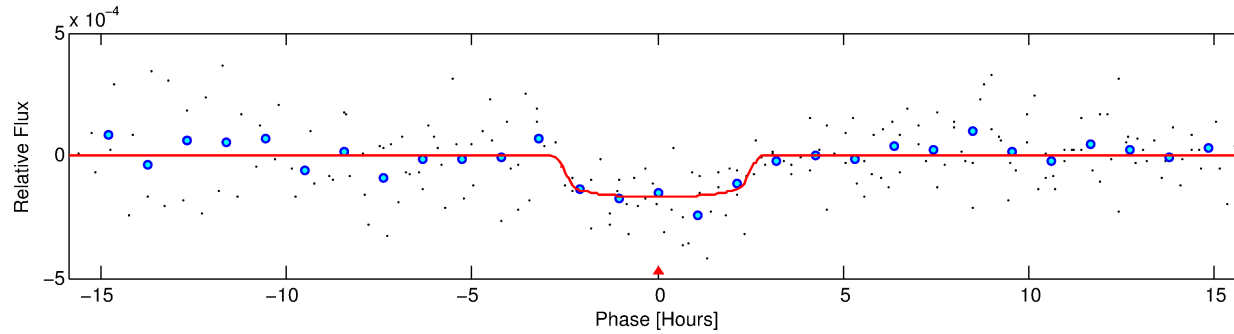
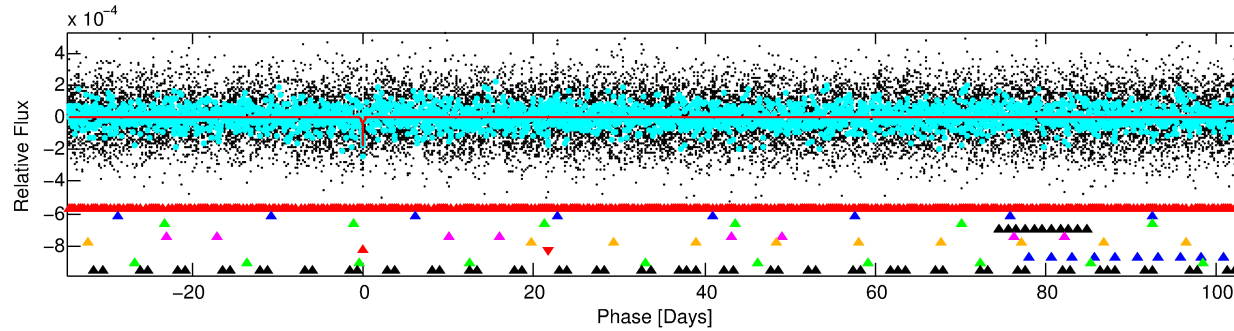
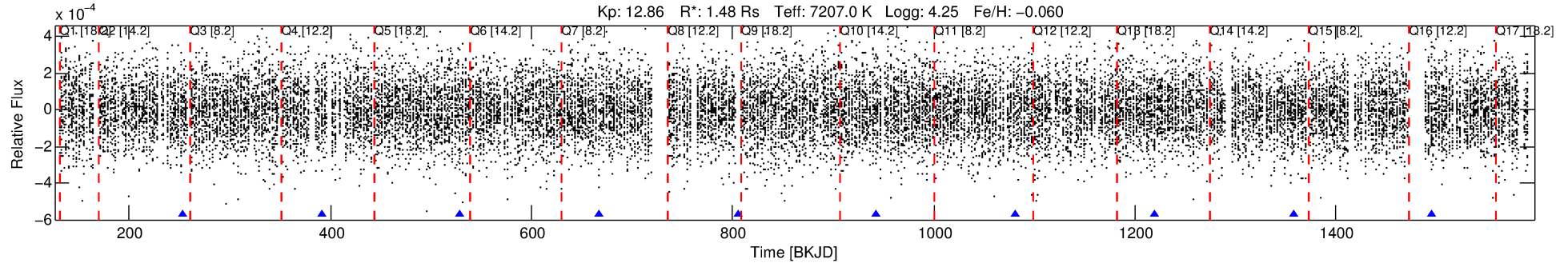
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-07

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 7 of 10 Period: 138.041 d



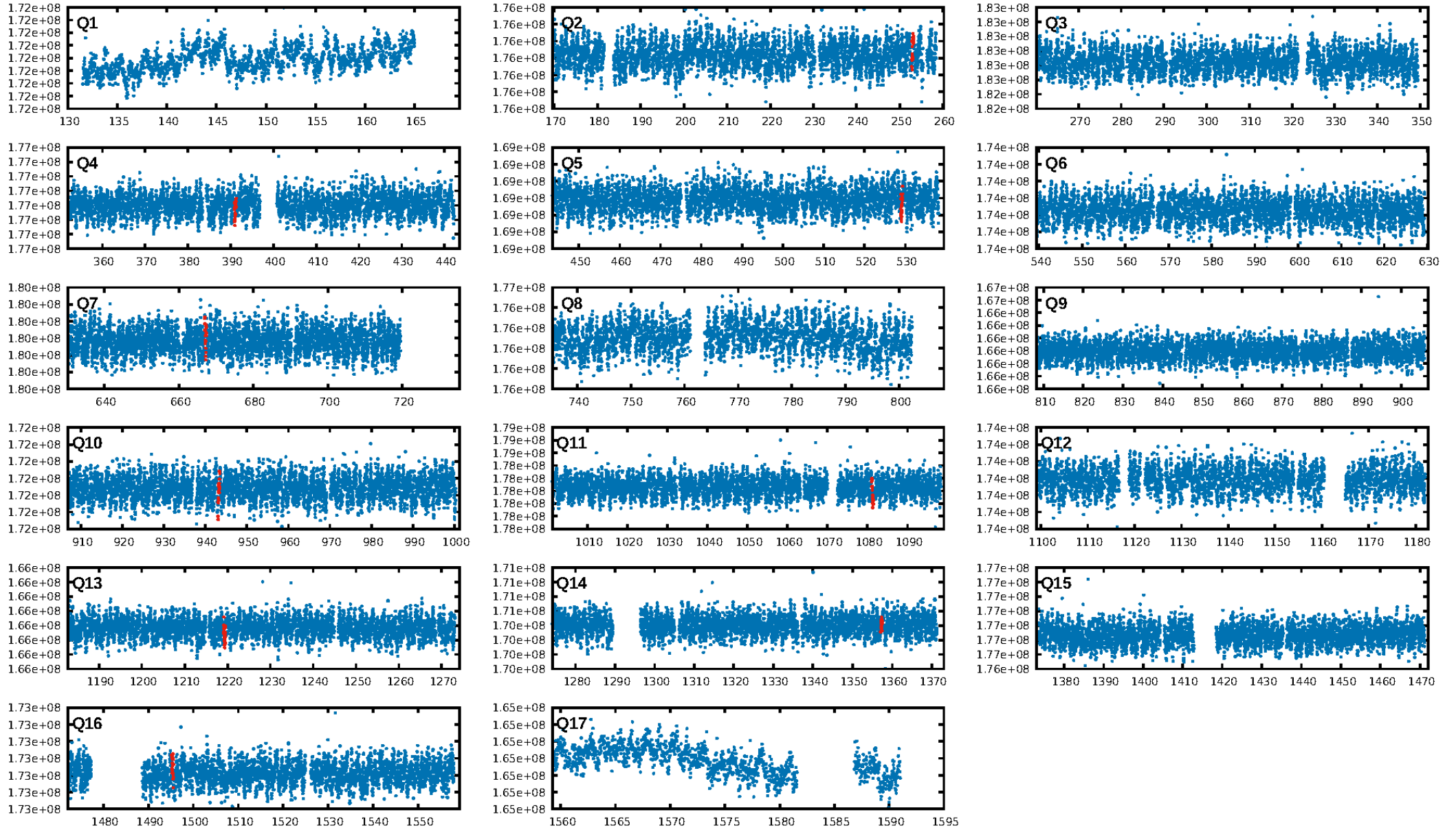
DV Fit Results:

Period = 138.04084 [0.00277] d
Epoch = 253.0211 [0.0176] BKJD
Rp/R* = 0.0135 [0.0074]
a/R* = 107.50 [365.33]
b = 0.86 [1.05]
Seff = 15.23 [6.36]
Teq = 504 [53] K
Rp = 2.18 [1.41] Re
a = 0.5896 [0.1648] AU
Ag = 5454.81 [6450.51] [0.85 σ]
Teffp = 6693 [1886] K [3.28 σ]

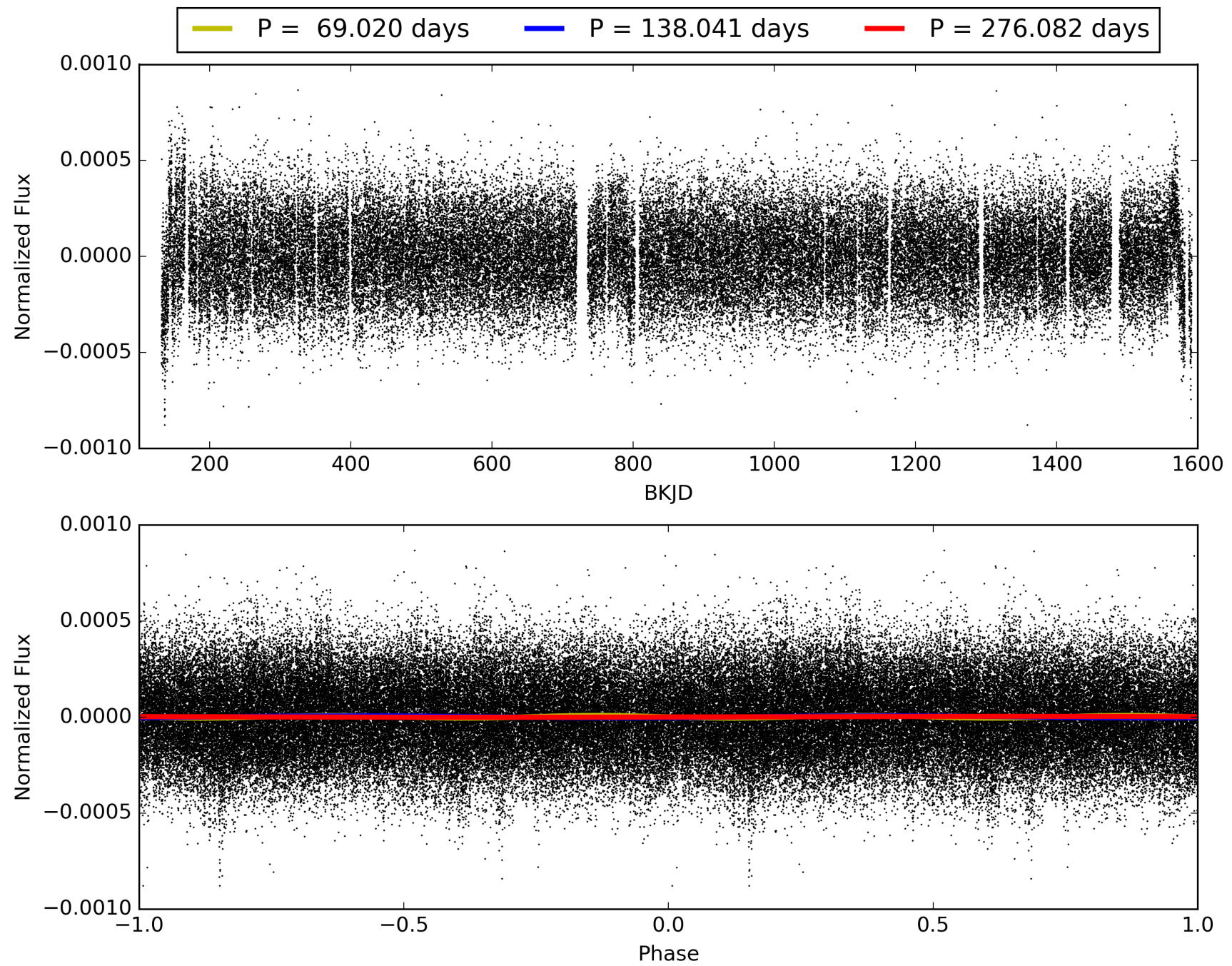
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.99 σ]
LongPeriod-sig: 100.0% [7.56 σ]
ModelChiSquare2-sig: 40.7%
ModelChiSquareGof-sig: 96.5%
Bootstrap-pfa: 1.72e-07
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.023
Centroid-sig: 0.0%
Centroid-so: 2.385 arcsec [2.39 σ]
OotOffset-rm: 0.307 arcsec [0.89 σ]
KicOffset-rm: 0.141 arcsec [0.43 σ]
OotOffset-st: 1/2/2/2 [7]
KicOffset-st: 1/2/2/2 [7]
DiffImageQuality-fgm: 0.71 [5/7]
DiffImageOverlap-fno: 0.33 [3/9]

TCE 009284487-07, PDC Light Curves

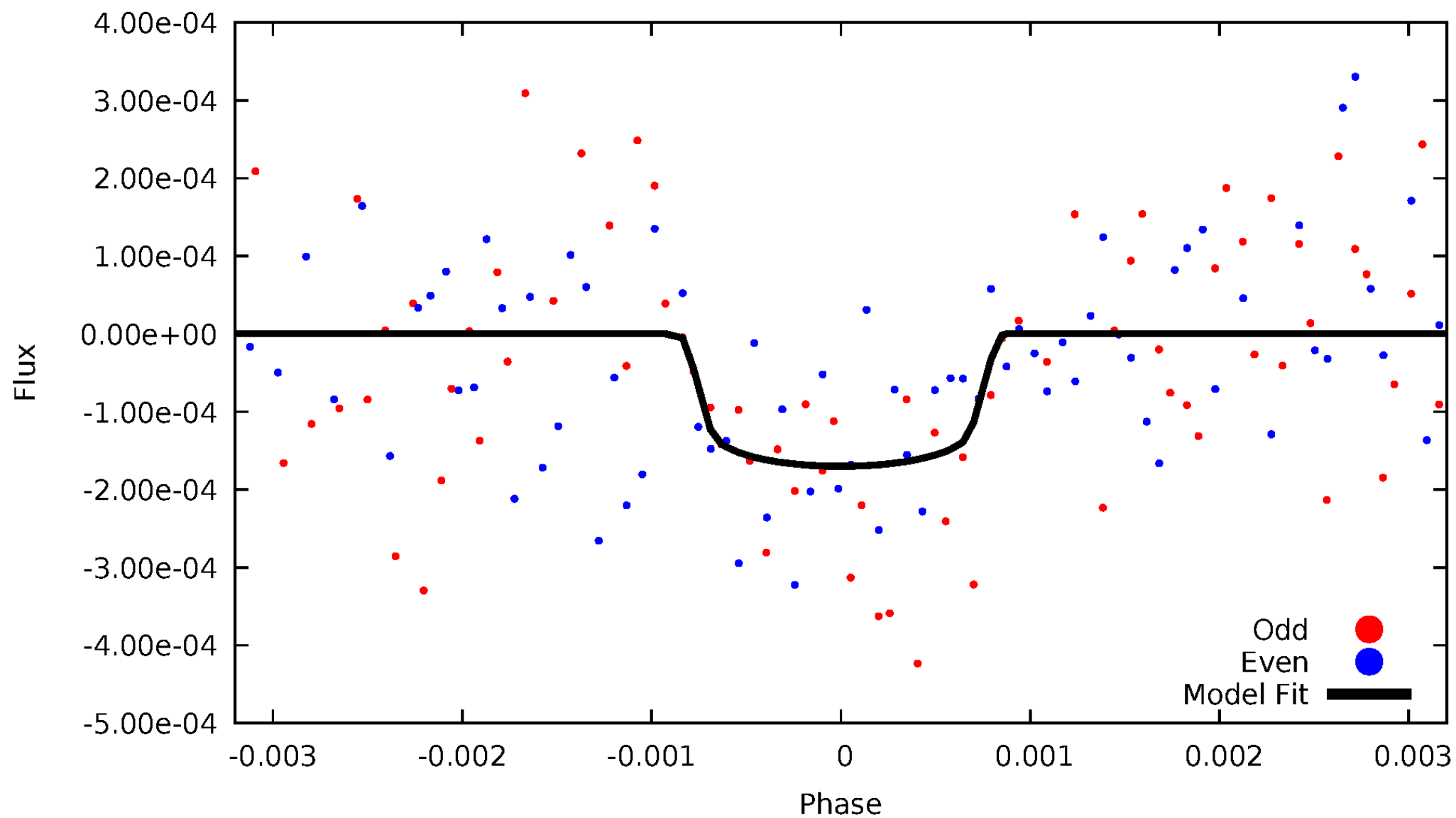


TCE 009284487-07



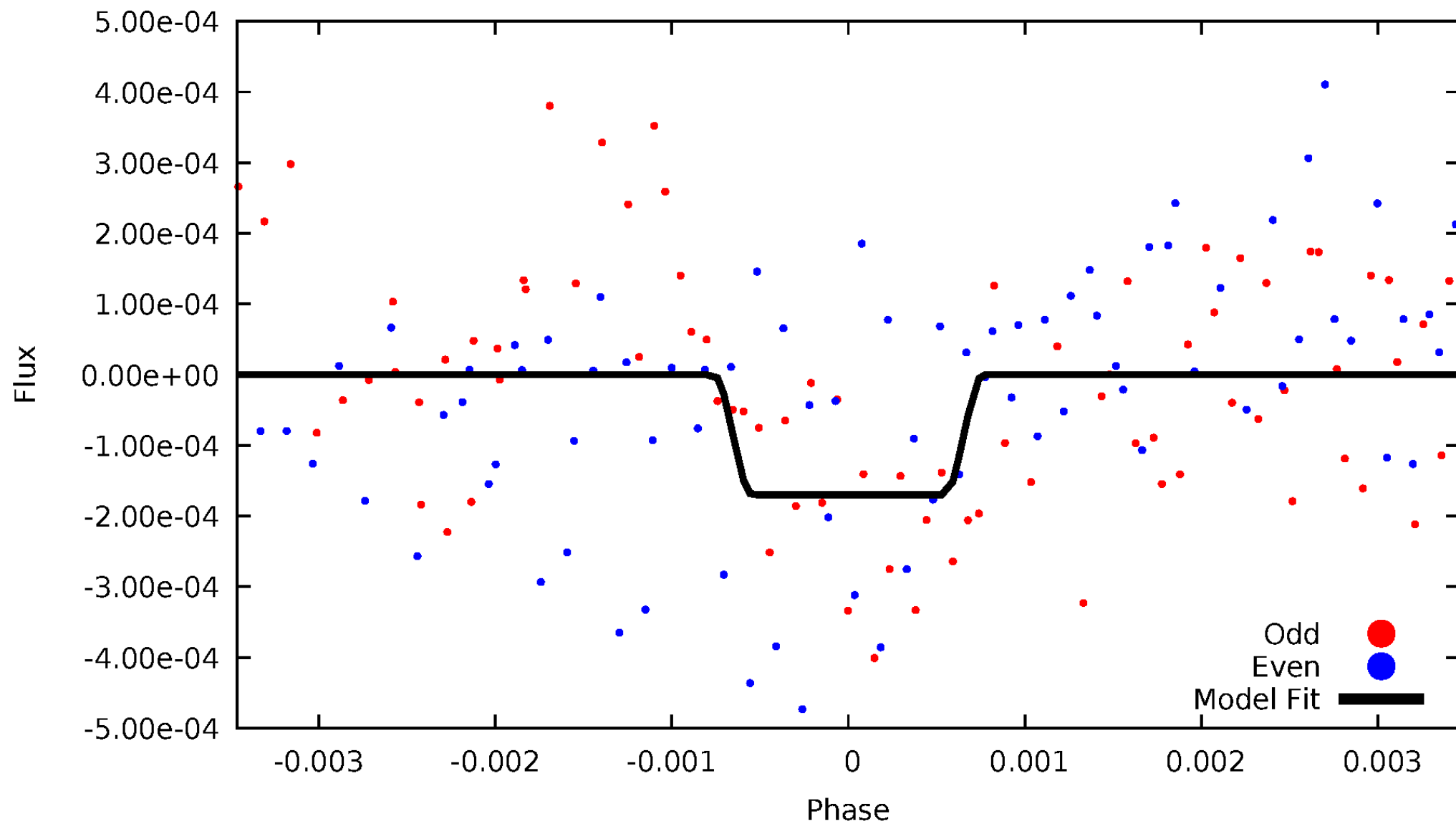
DV Odd/Even

TCE 009284487-07

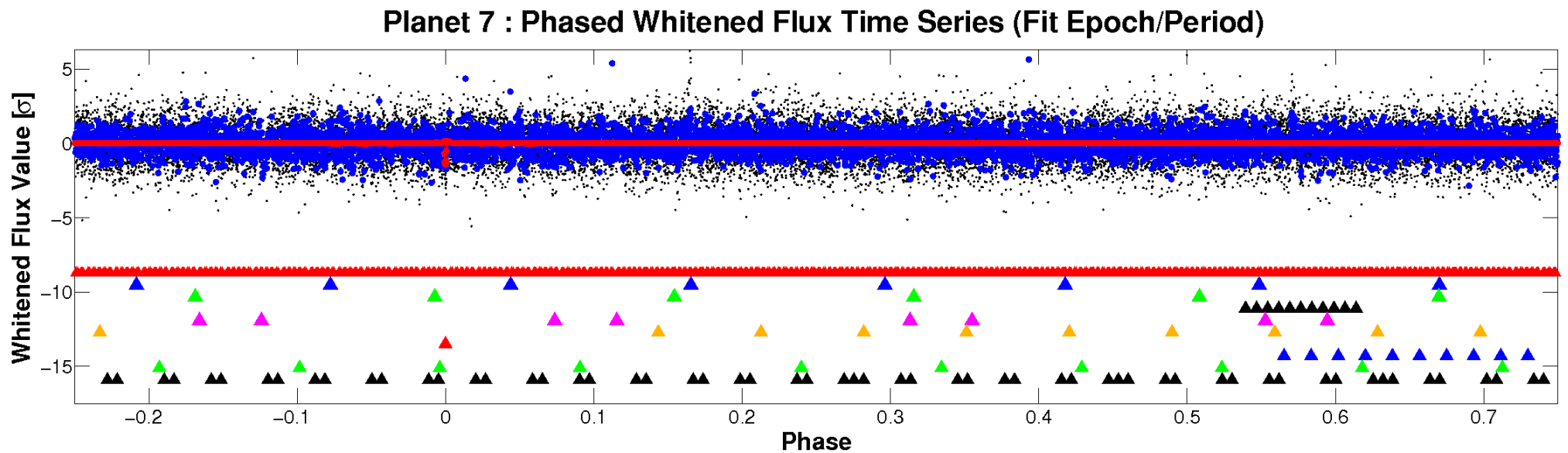
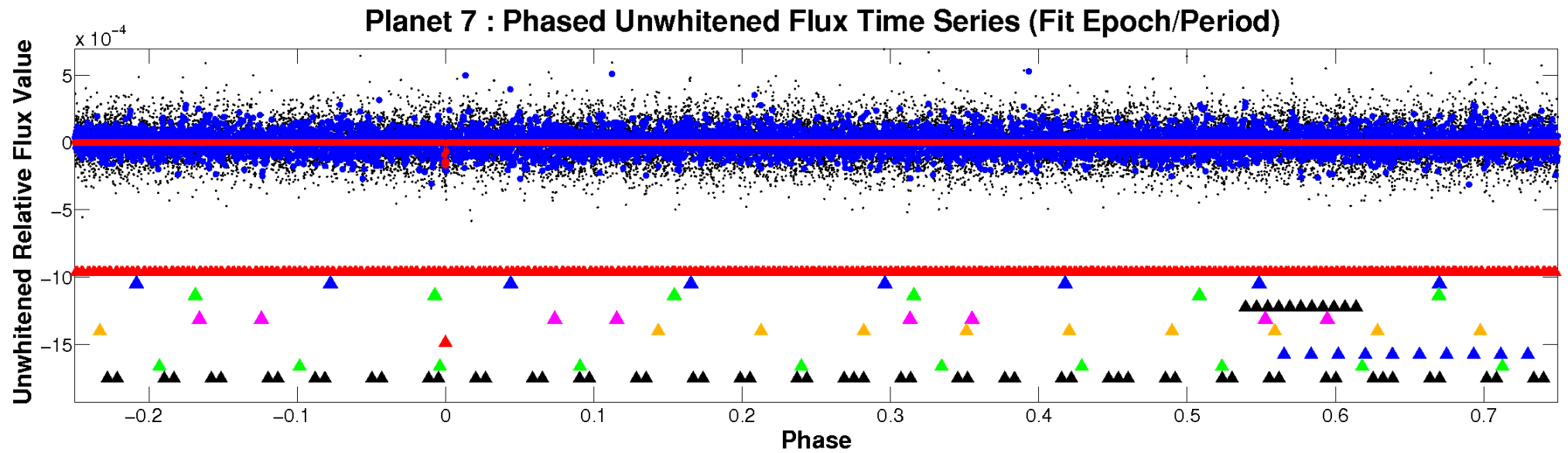


ALT Odd/Even

TCE 009284487-07

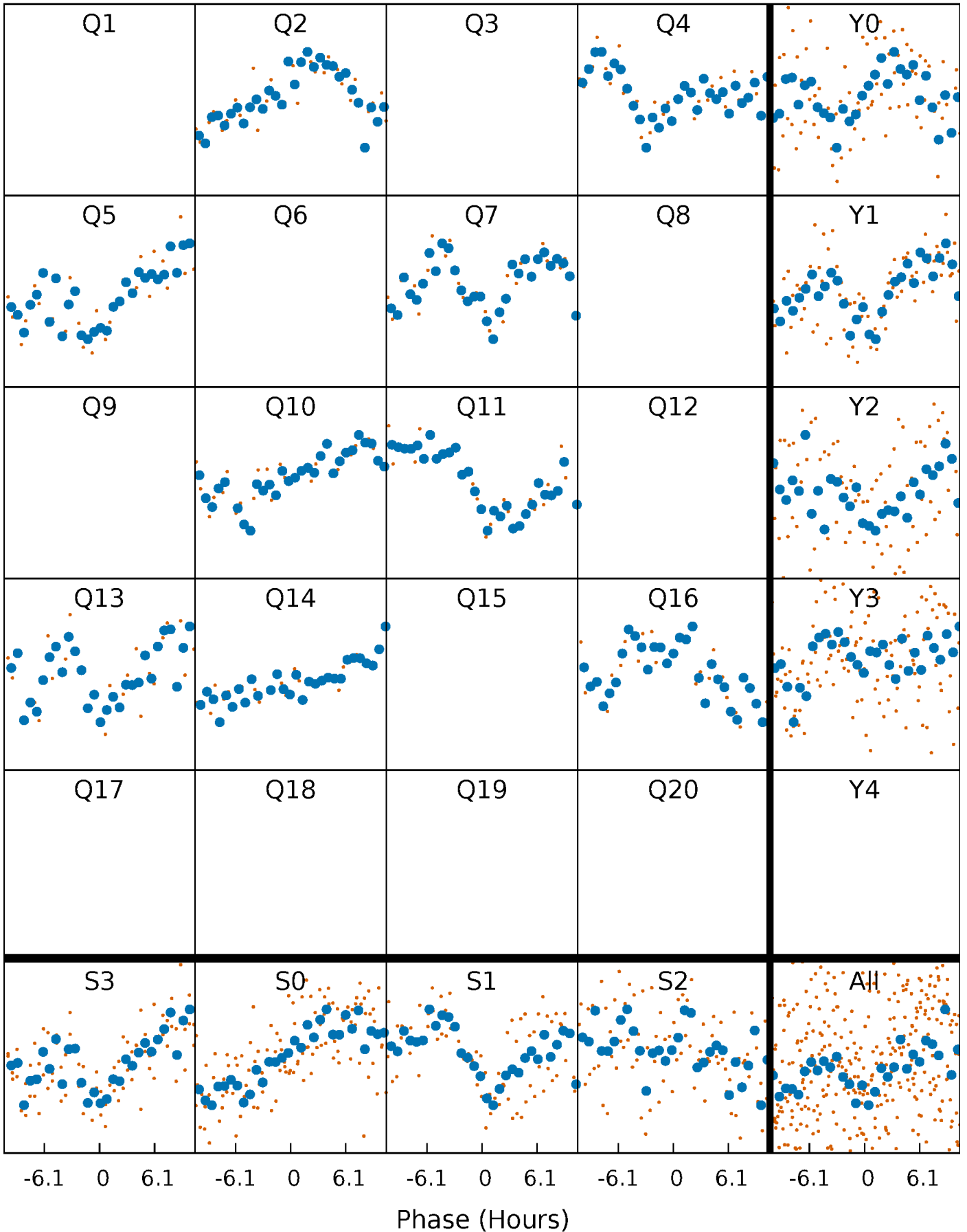


Non-Whitened Vs. Whitened Light Curve



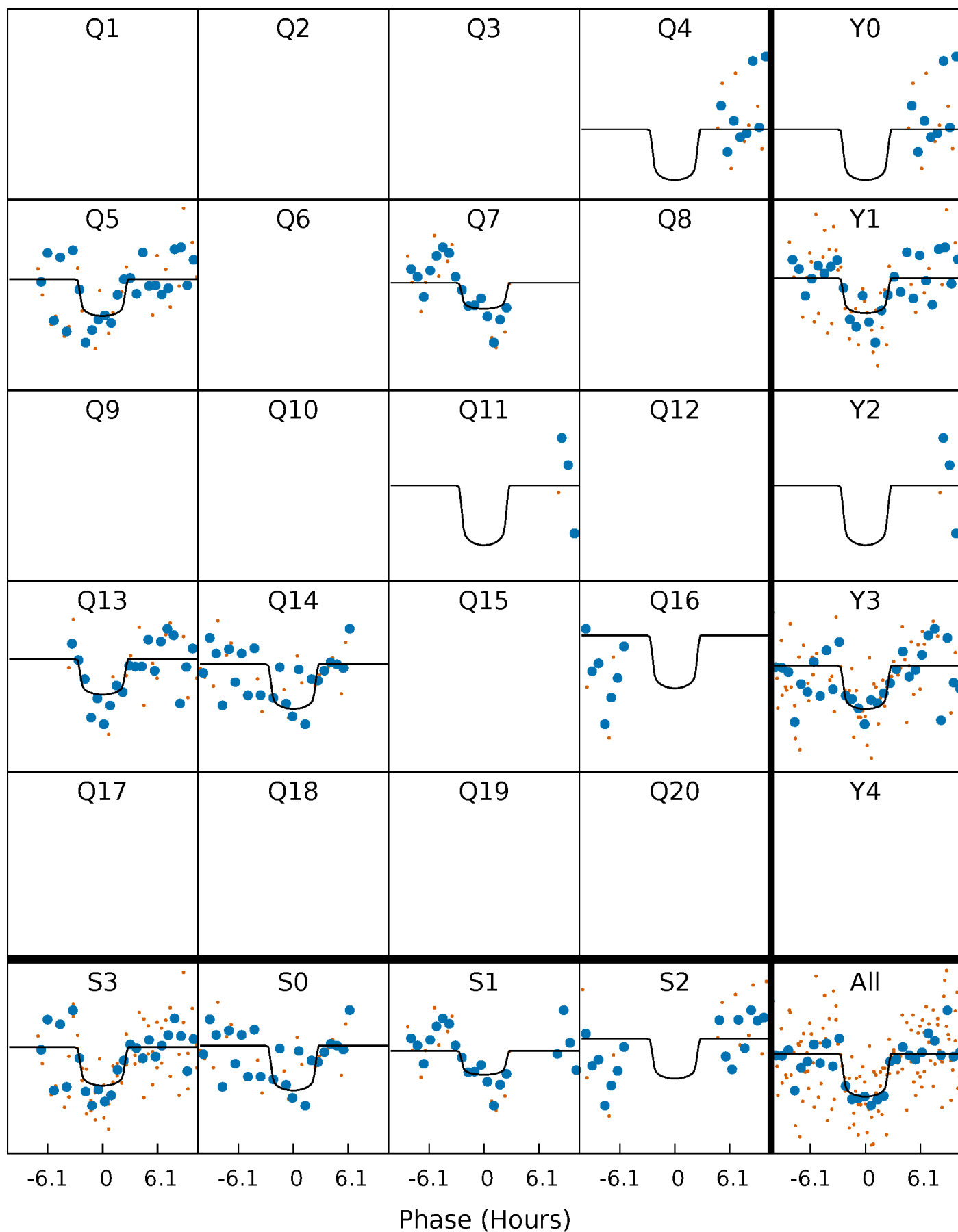
PDC Quarter-Phased Transit Curves

TCE 009284487-07 $P=138.040844$ Days $T_0=253.021107$ (BKJD)



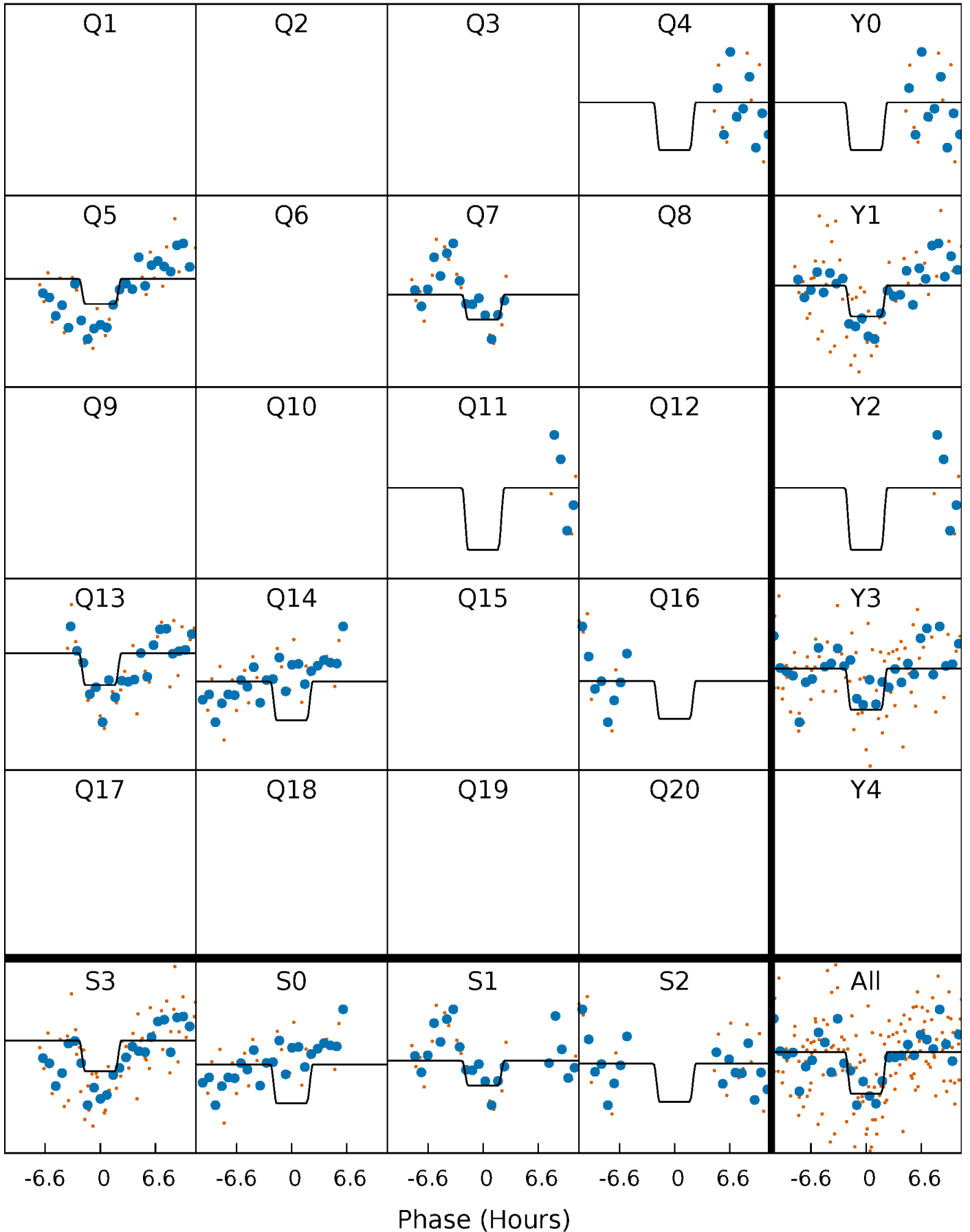
DV Quarter-Phased Transit Curves

TCE 009284487-07 $P=138.040844$ Days $T_0=253.021107$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

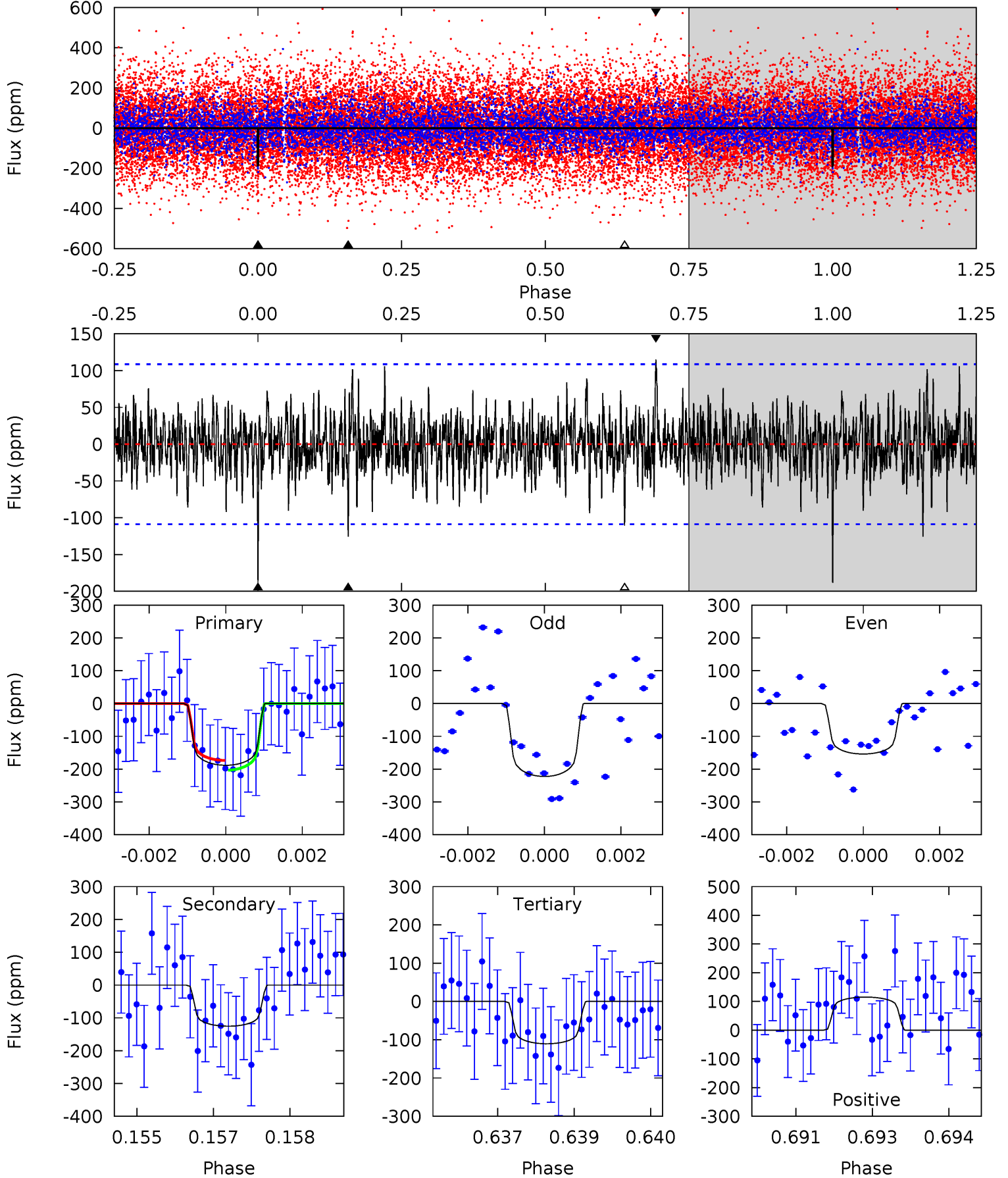
TCE 009284487-07 $P=138.041809$ Days $T_0=253.021570$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-07, P = 138.040844 Days, E = 114.980263 Days

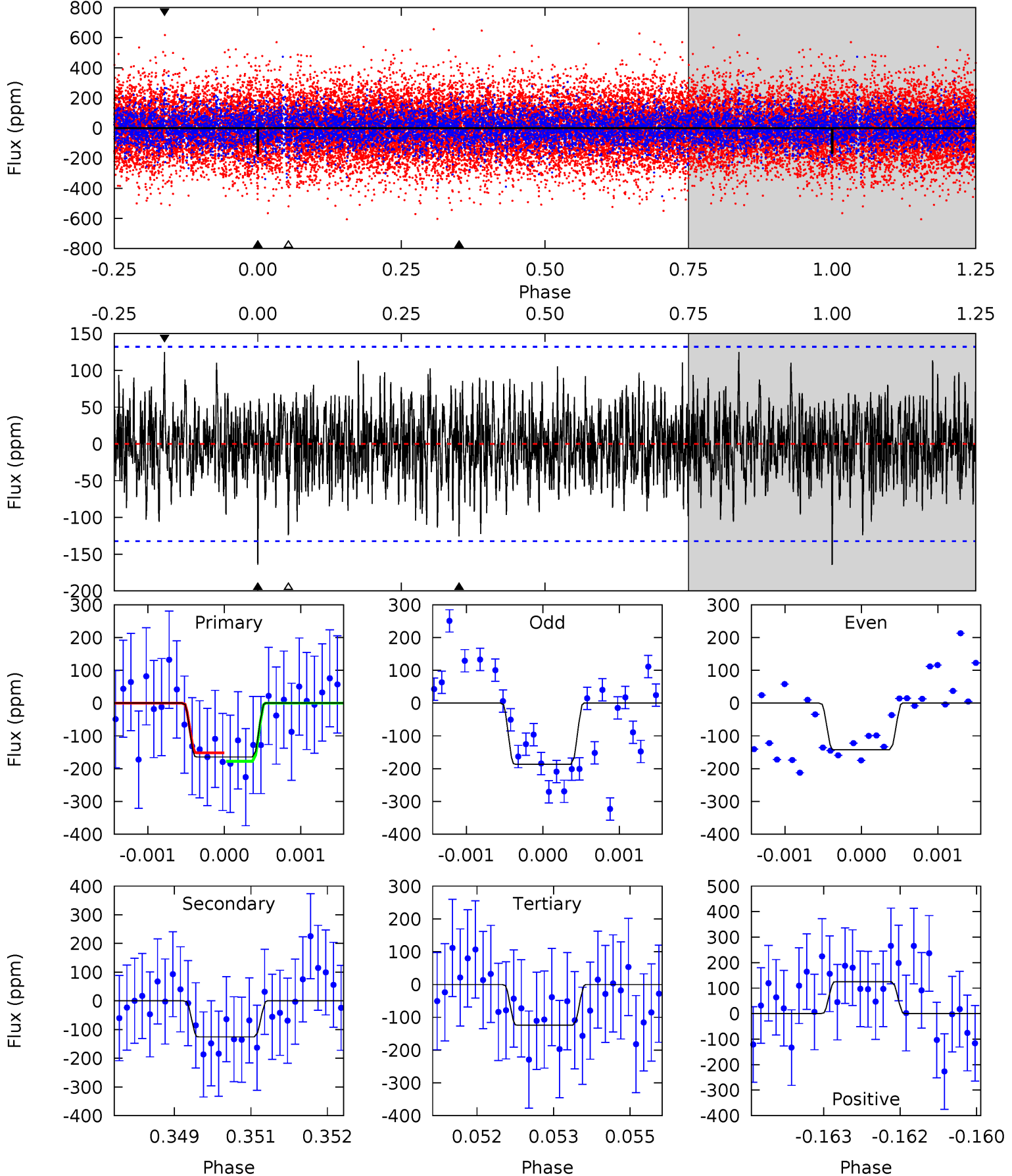
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.27	6.18	5.44	5.67	5.36	3.14	1.46	3.83	3.60	0.73	0.51	1.68	0.94	0.38	0.73



Alt Model-Shift Uniqueness Test

009284487-07, P = 138.041809 Days, E = 114.979761 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.70	5.11	5.05	5.09	5.39	3.19	1.54	1.65	1.61	0.06	0.02	0.90	0.88	0.43	0.53



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-125 ± 20	$2.35^{+1.29}_{-1.21}$	713^{+54}_{-42}	6316^{+3426}_{-1179}	4342^{+13860}_{-2626}
Alt.	-125 ± 25	$2.14^{+1.25}_{-1.14}$	714^{+57}_{-44}	6629^{+3804}_{-1298}	4988^{+17347}_{-2989}

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 $A_{obs} \gg 1.0$

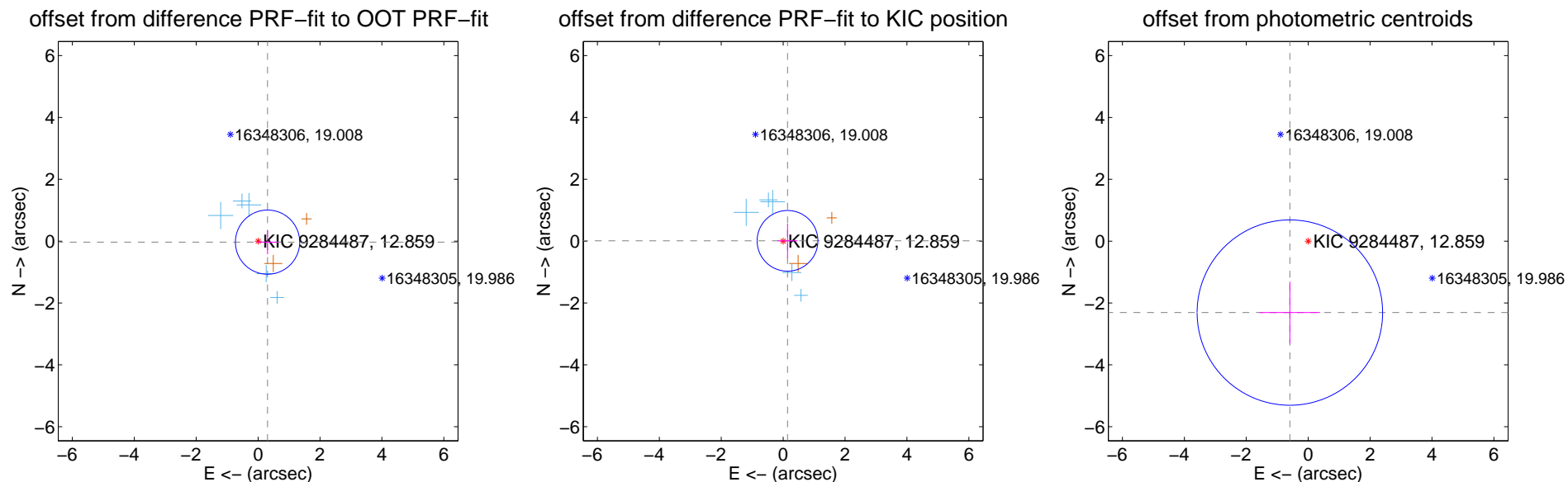
DV Centroid Data

Supplemental centroid analysis for 009284487-07. Kepler magnitude: 12.86. Transit SNR 8.18

There are 5 quarters with good PRF difference image offsets

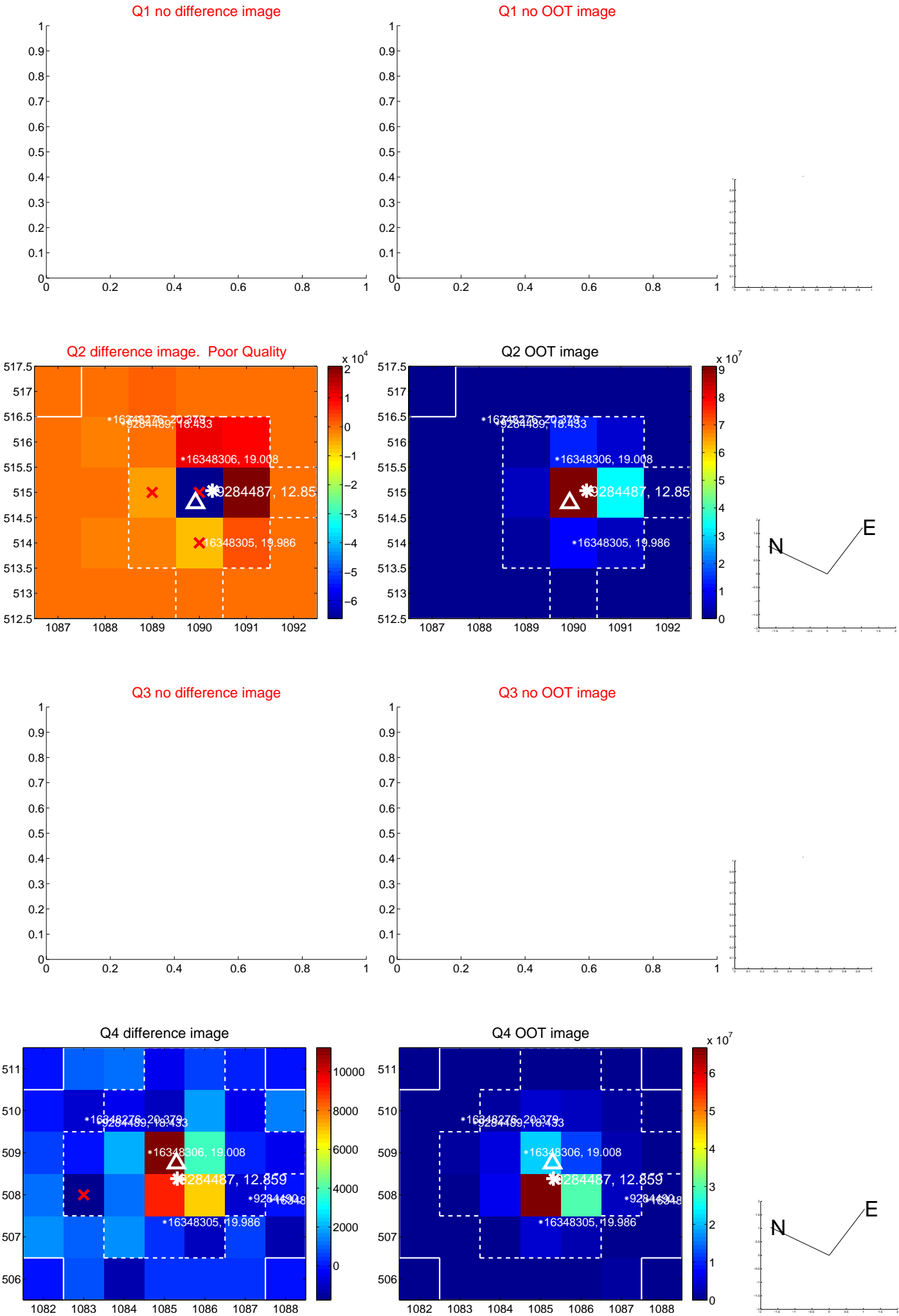
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.307 ± 0.346	0.89	-0.305 ± 0.329	-0.032 ± 0.392
PRF-fit source offset from KIC position	0.141 ± 0.327	0.43	-0.141 ± 0.326	0.010 ± 0.557
photometric centroid source offset	2.38 ± 1.00	2.39	0.59 ± 0.98	-2.31 ± 1.00

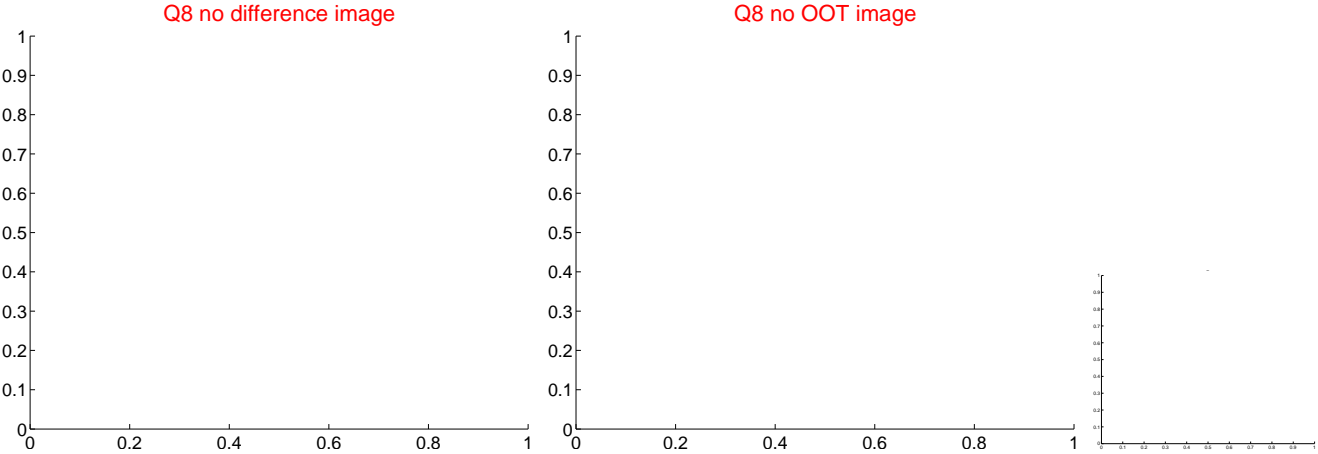
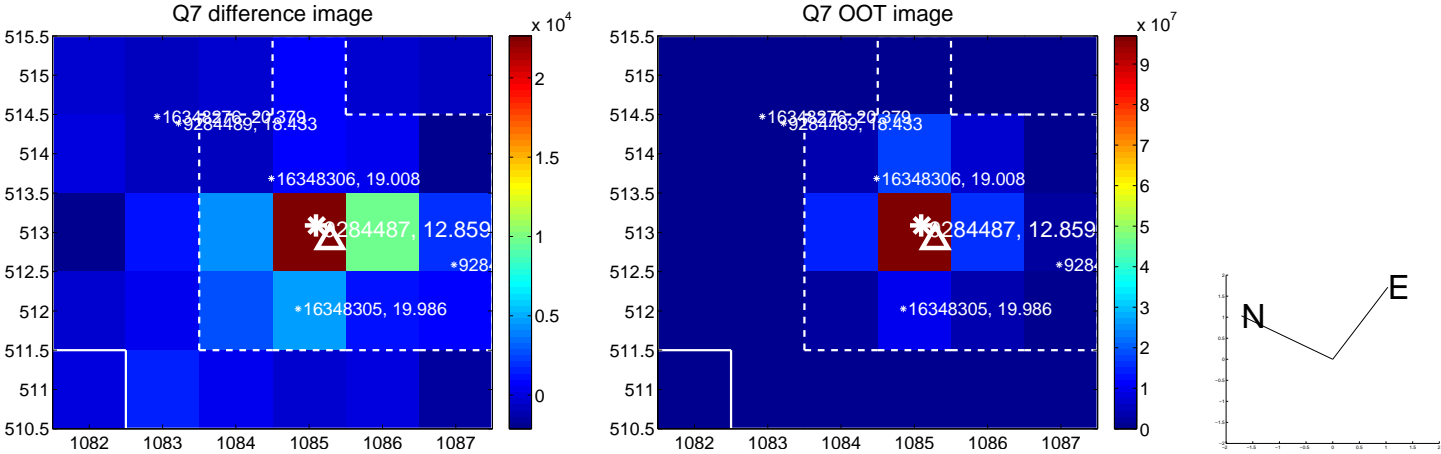
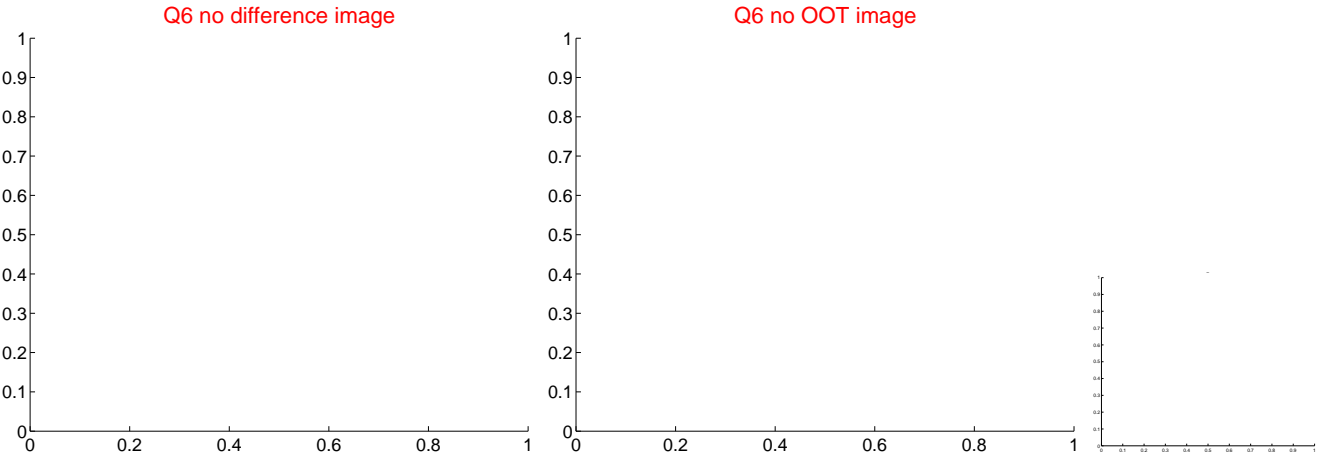
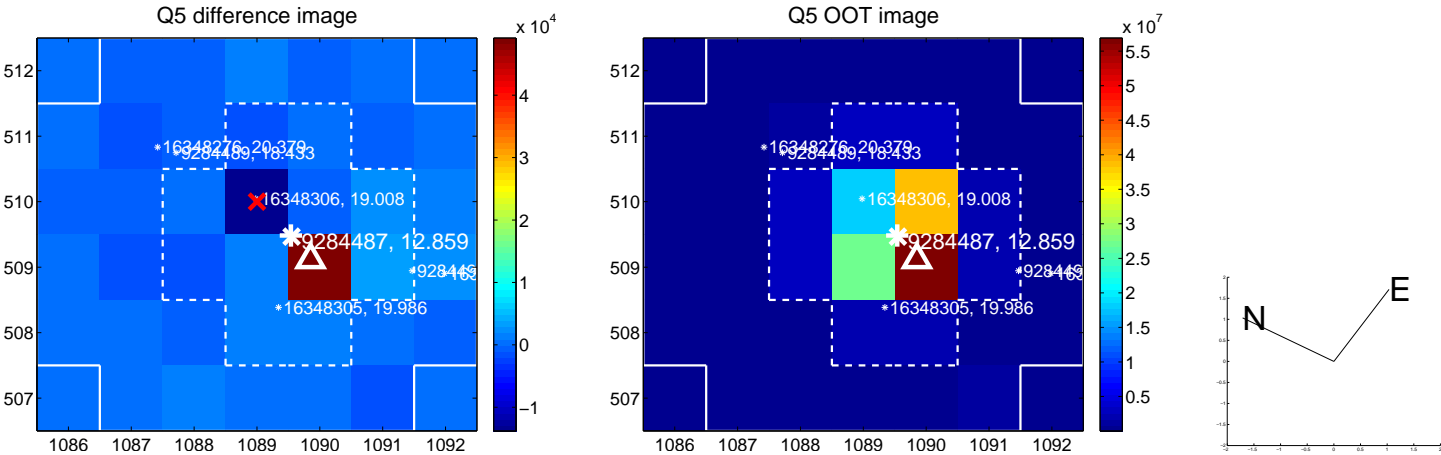


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

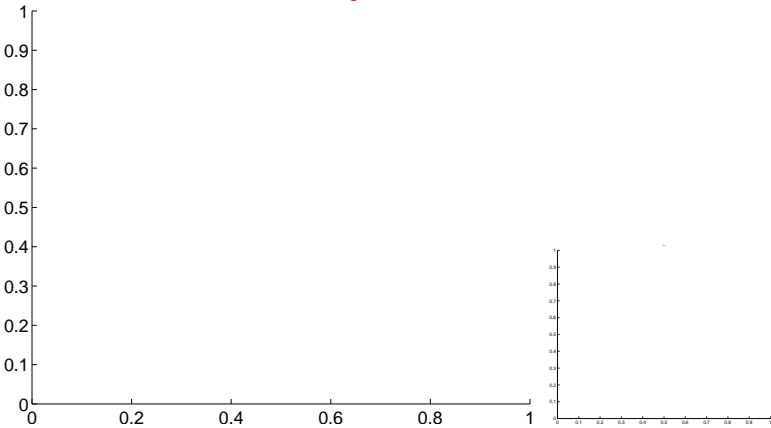


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

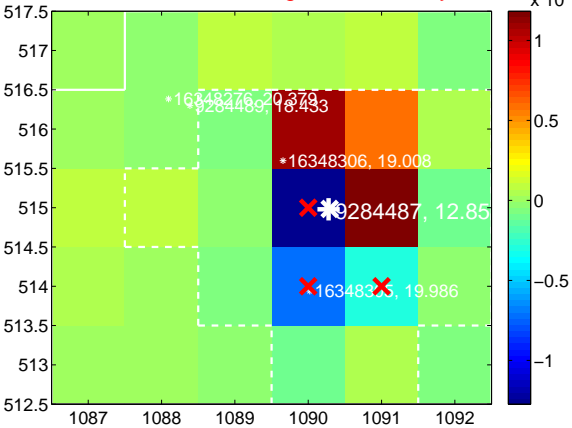
Q9 no difference image



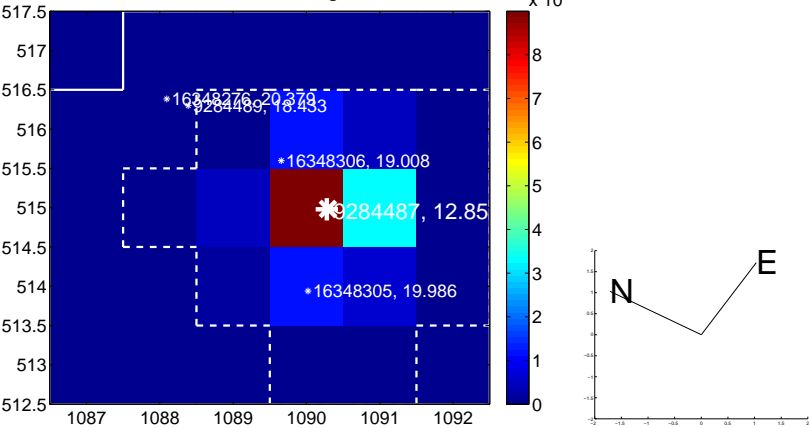
Q9 no OOT image



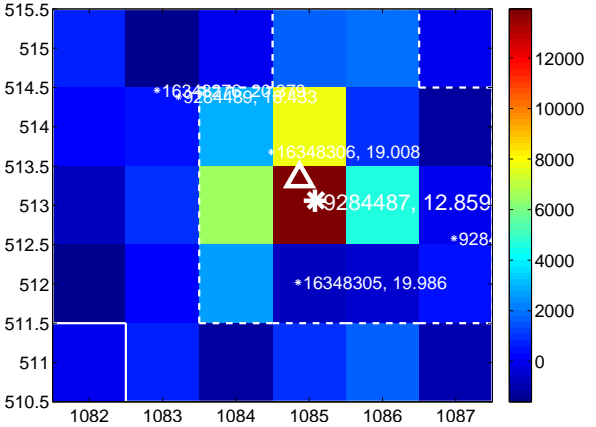
Q10 difference image. Poor Quality



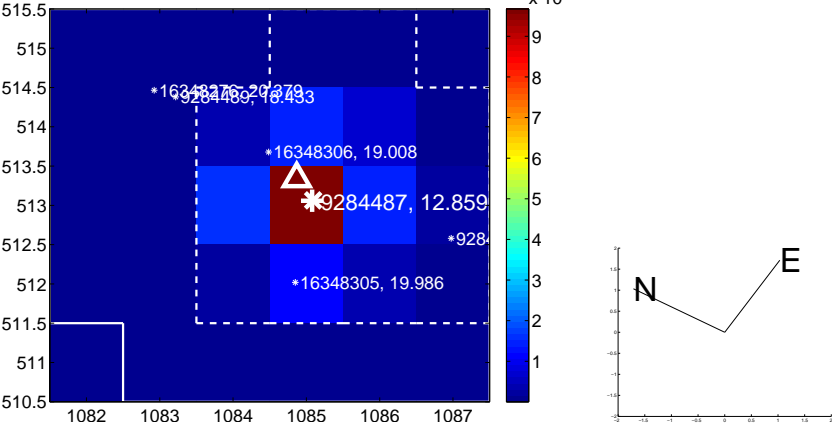
Q10 OOT image



Q11 difference image



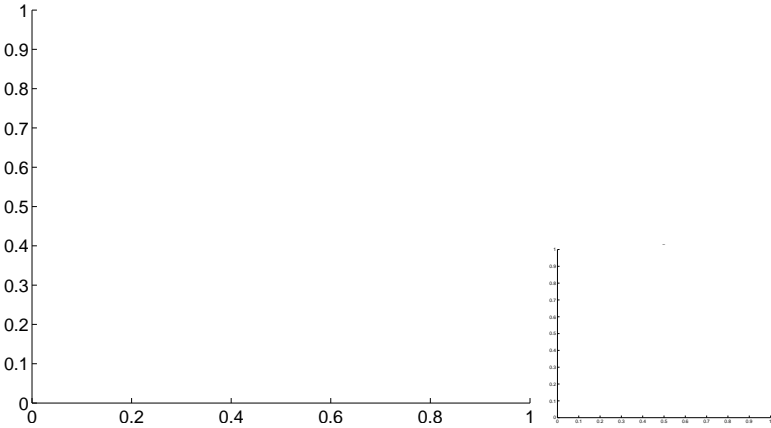
Q11 OOT image



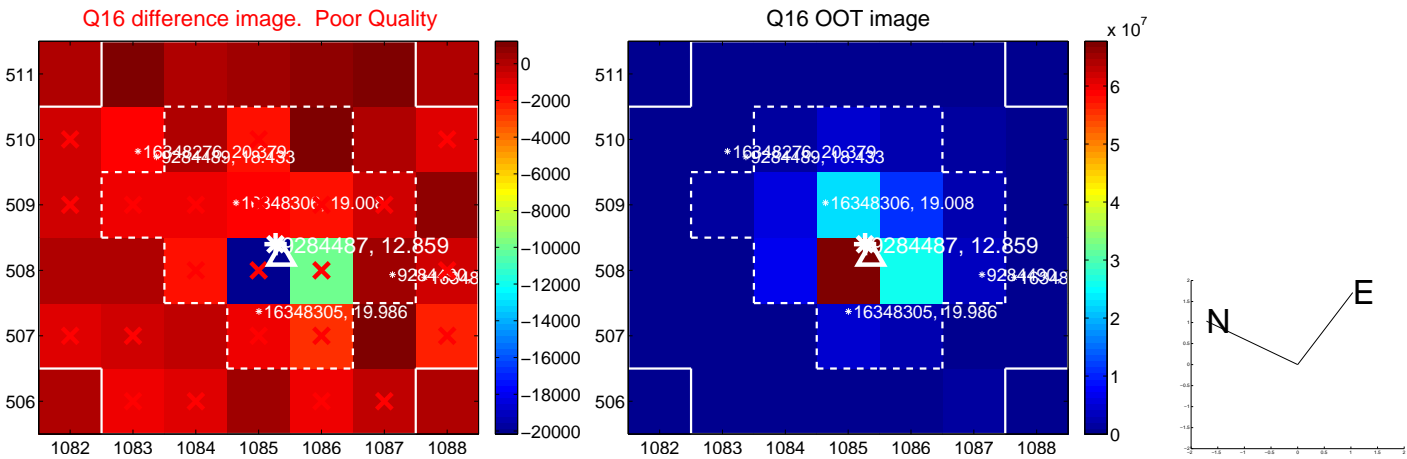
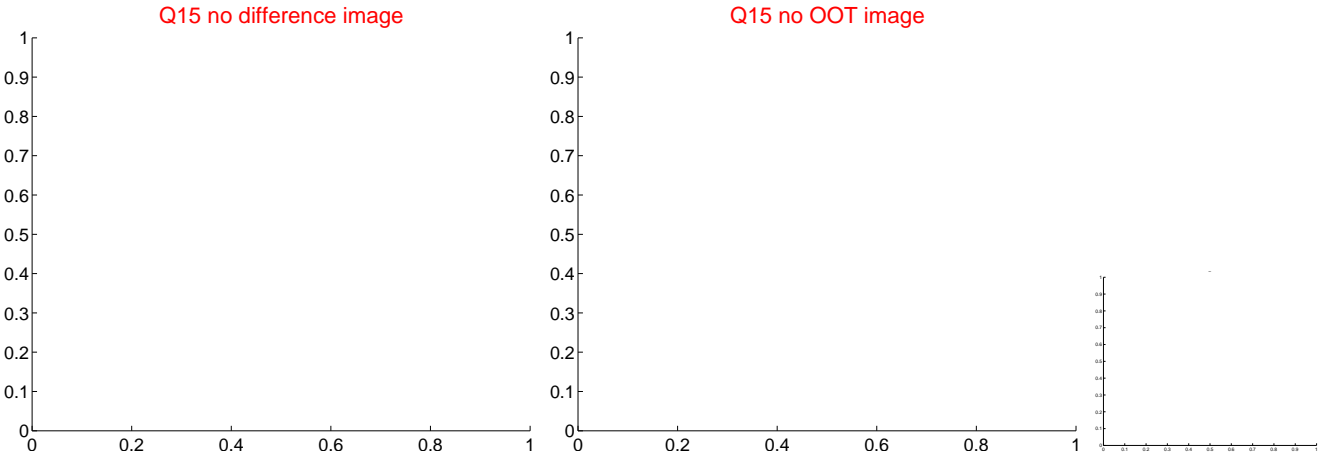
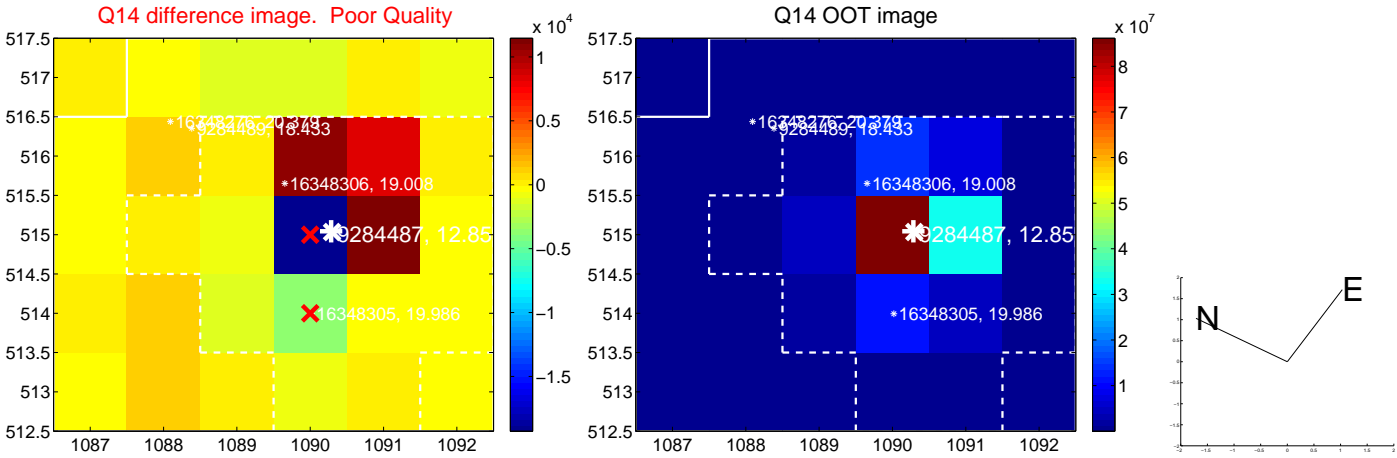
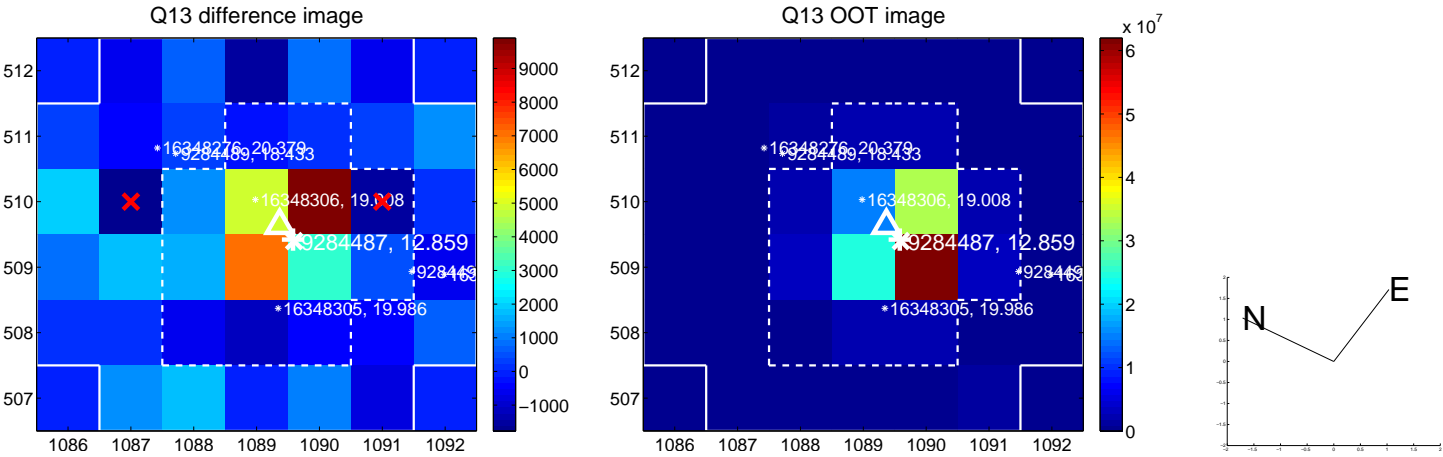
Q12 no difference image



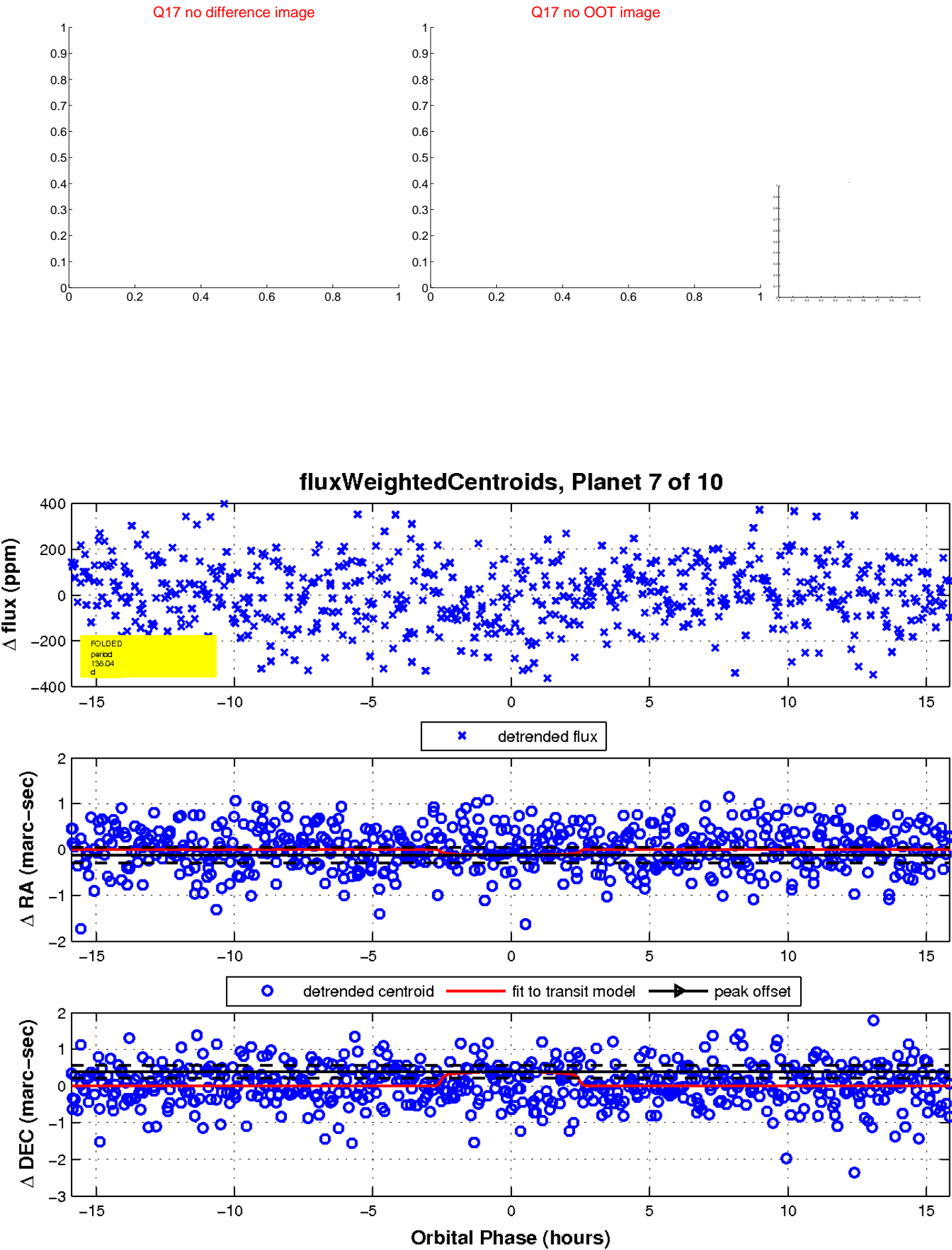
Q12 no OOT image



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

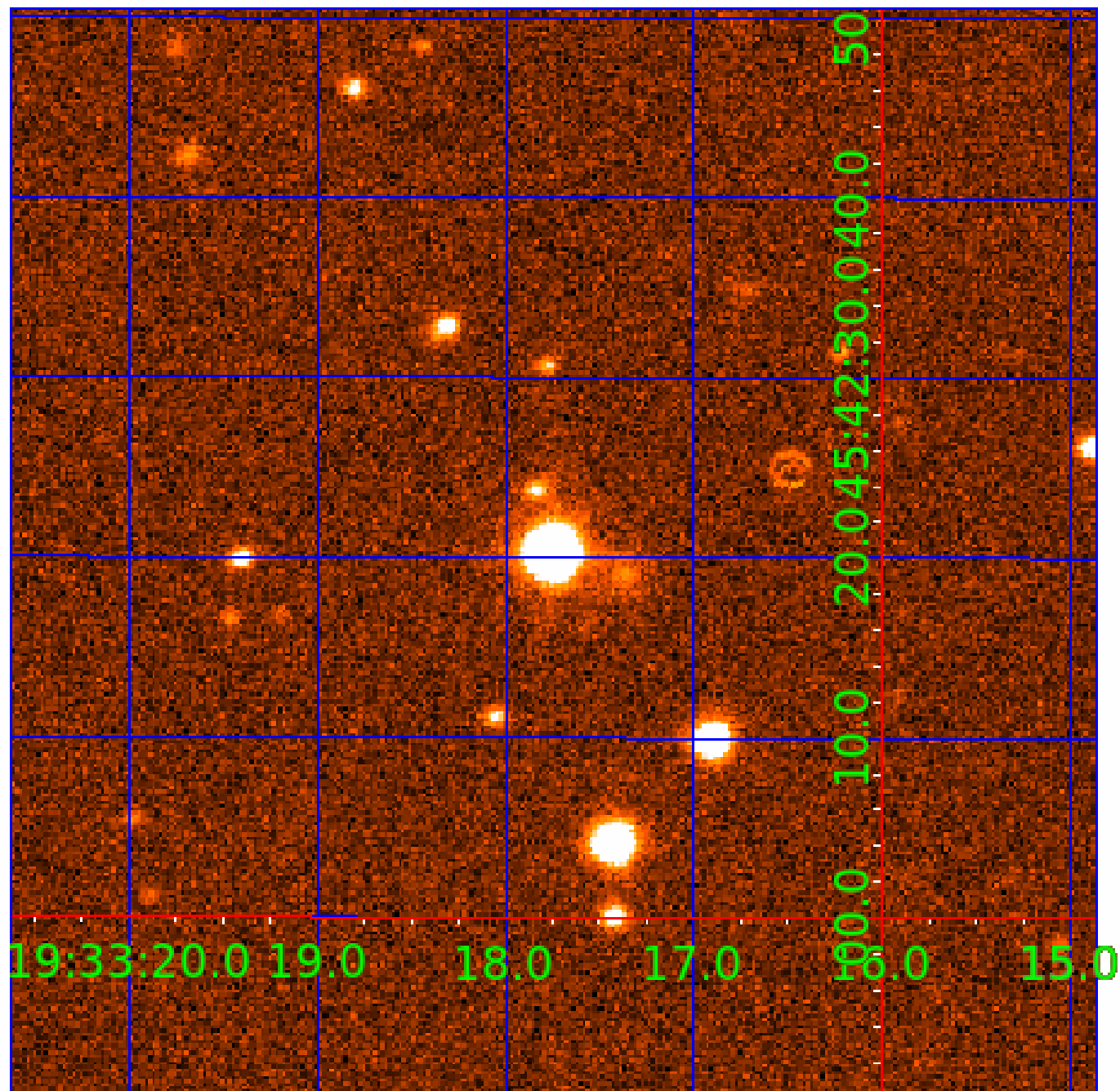


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

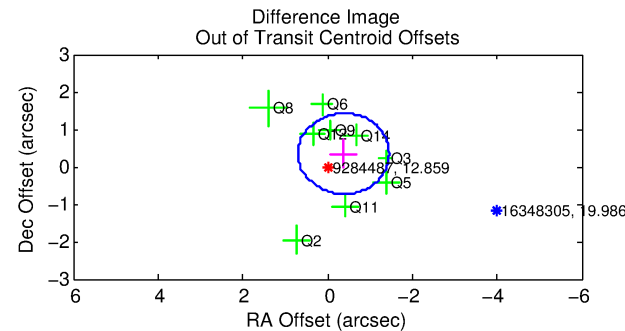
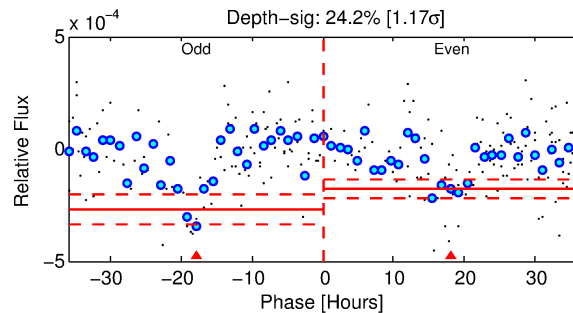
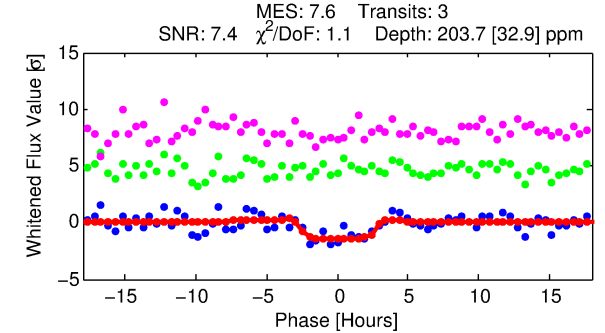
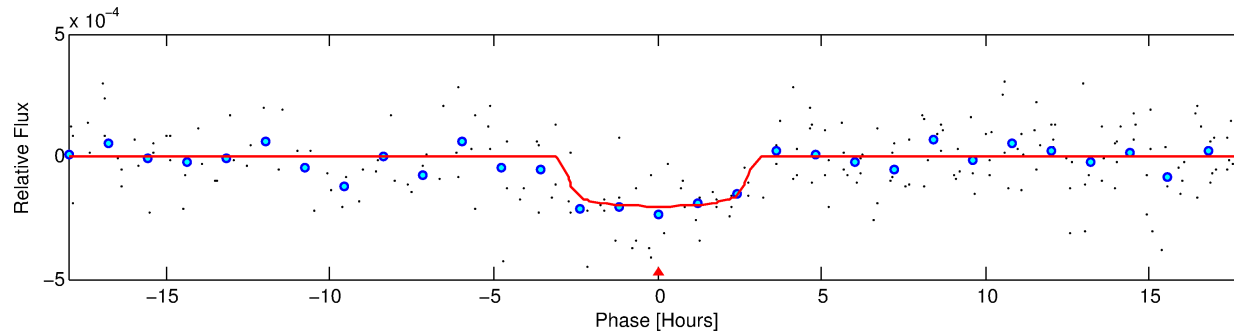
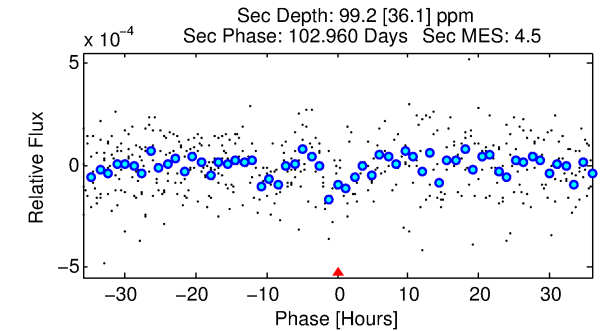
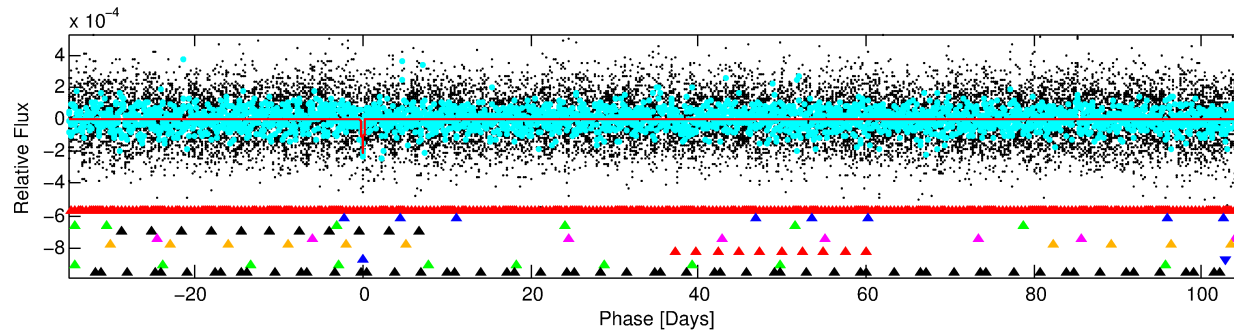
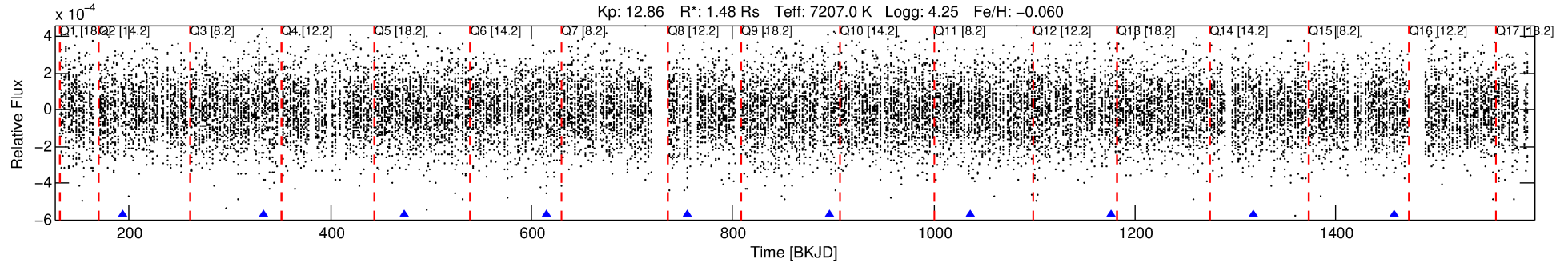
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-08

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 8 of 10 Period: 140.562 d



DV Fit Results:

Period = 140.56212 [0.00277] d
Epoch = 193.0286 [0.0168] BKJD
Rp/R* = 0.0152 [0.0062]
a/R* = 83.69 [212.45]
b = 0.90 [0.53]
Seff = 14.87 [6.21]
Teq = 501 [52] K
Rp = 2.45 [1.32] Re
a = 0.5967 [0.1668] AU
Ag = 3234.59 [3153.86] [1.03σ]
Teffp = 5838 [1324] K [4.03σ]

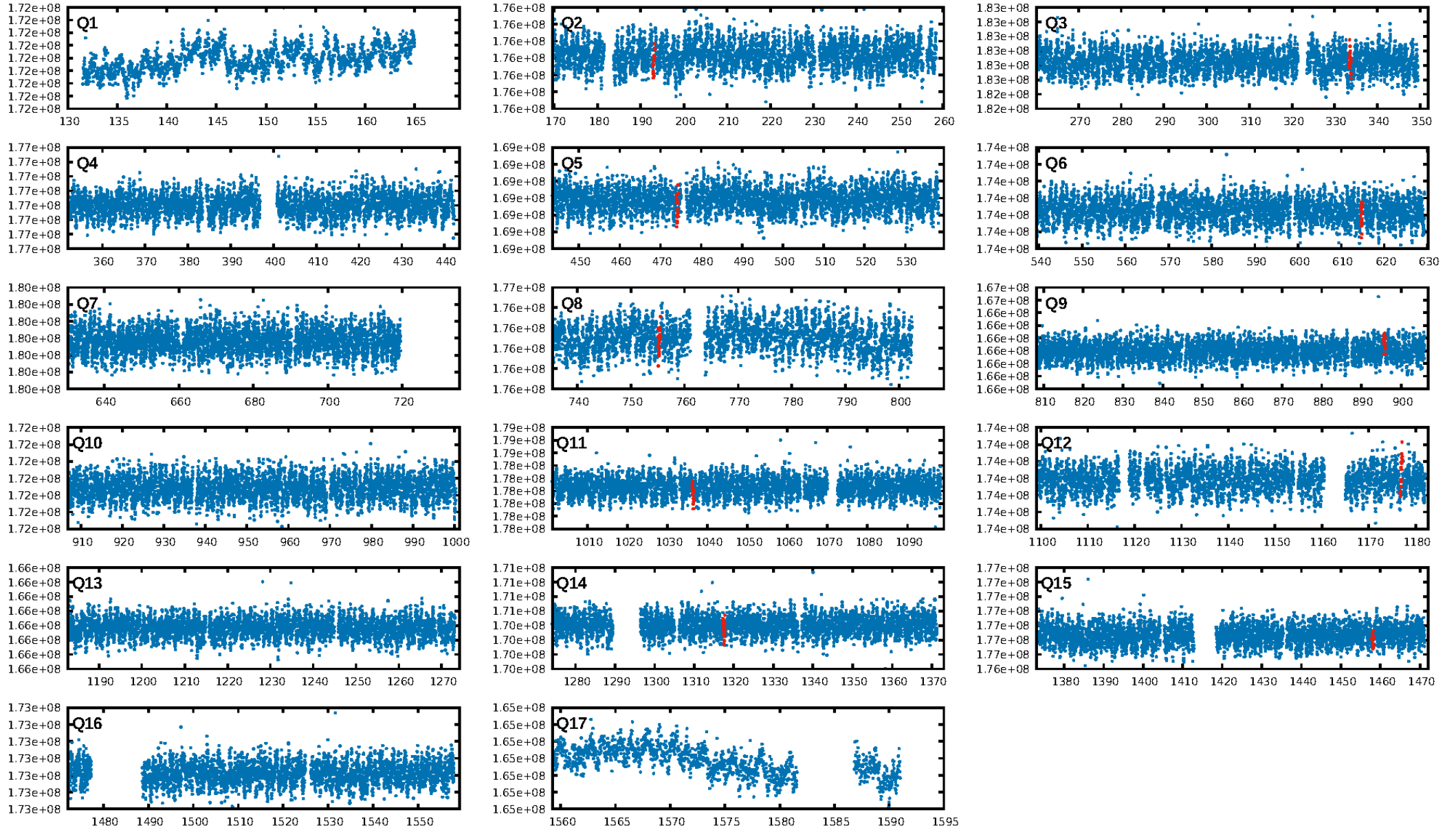
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.56σ]
LongPeriod-sig: 100.0% [25.76σ]
ModelChiSquare2-sig: 56.3%
ModelChiSquareGof-sig: 94.0%
Bootstrap-pfa: 6.21e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.92
Centroid-sig: 56.0%
Centroid-so: 0.464 arcsec [0.62σ]
OotOffset-rm: 0.515 arcsec [1.43σ]
KicOffset-rm: 0.537 arcsec [1.47σ]
OotOffset-st: 3/2/2/2 [9]
KicOffset-st: 3/2/2/2 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 0.20 [2/10]

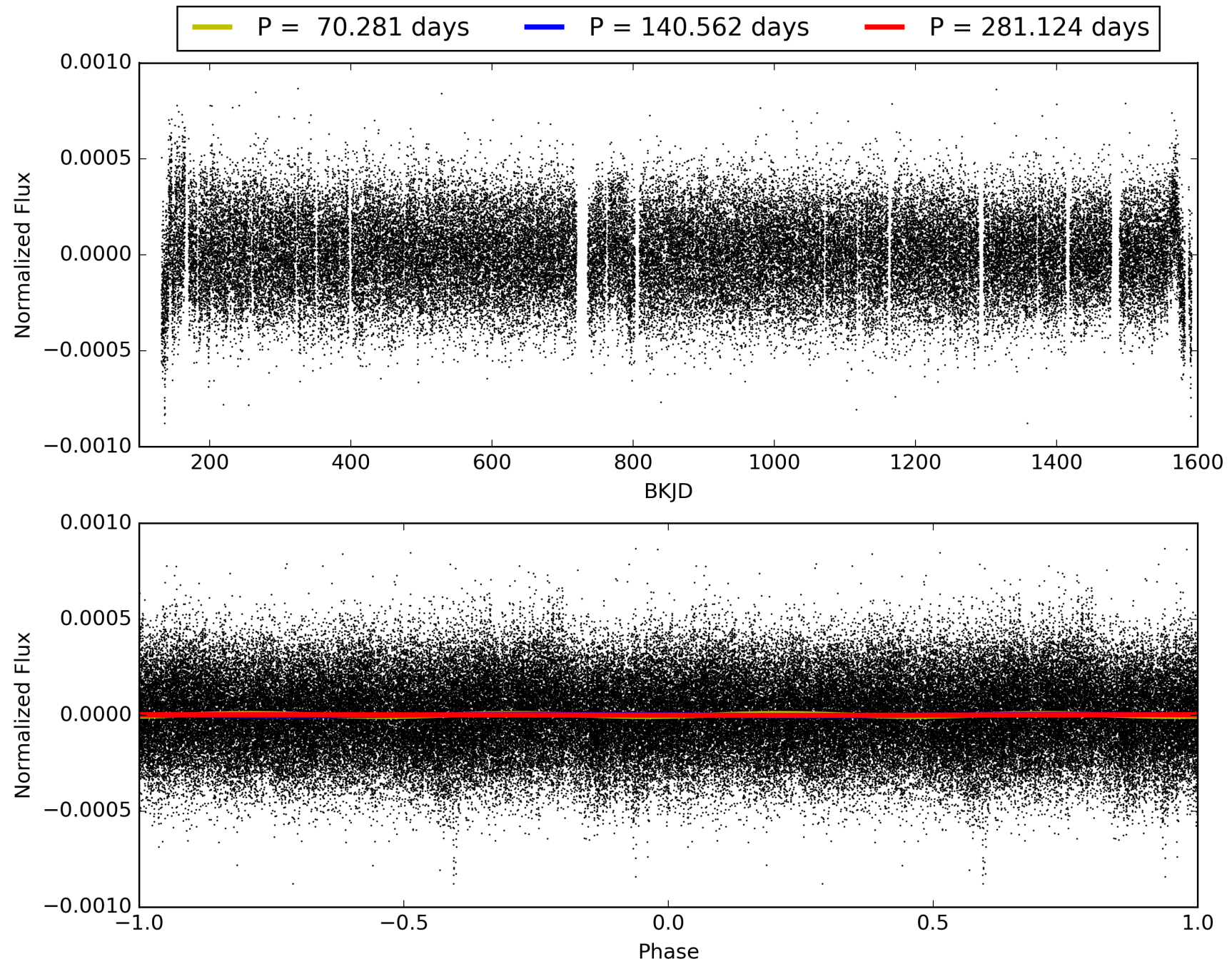
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009284487-08, PDC Light Curves

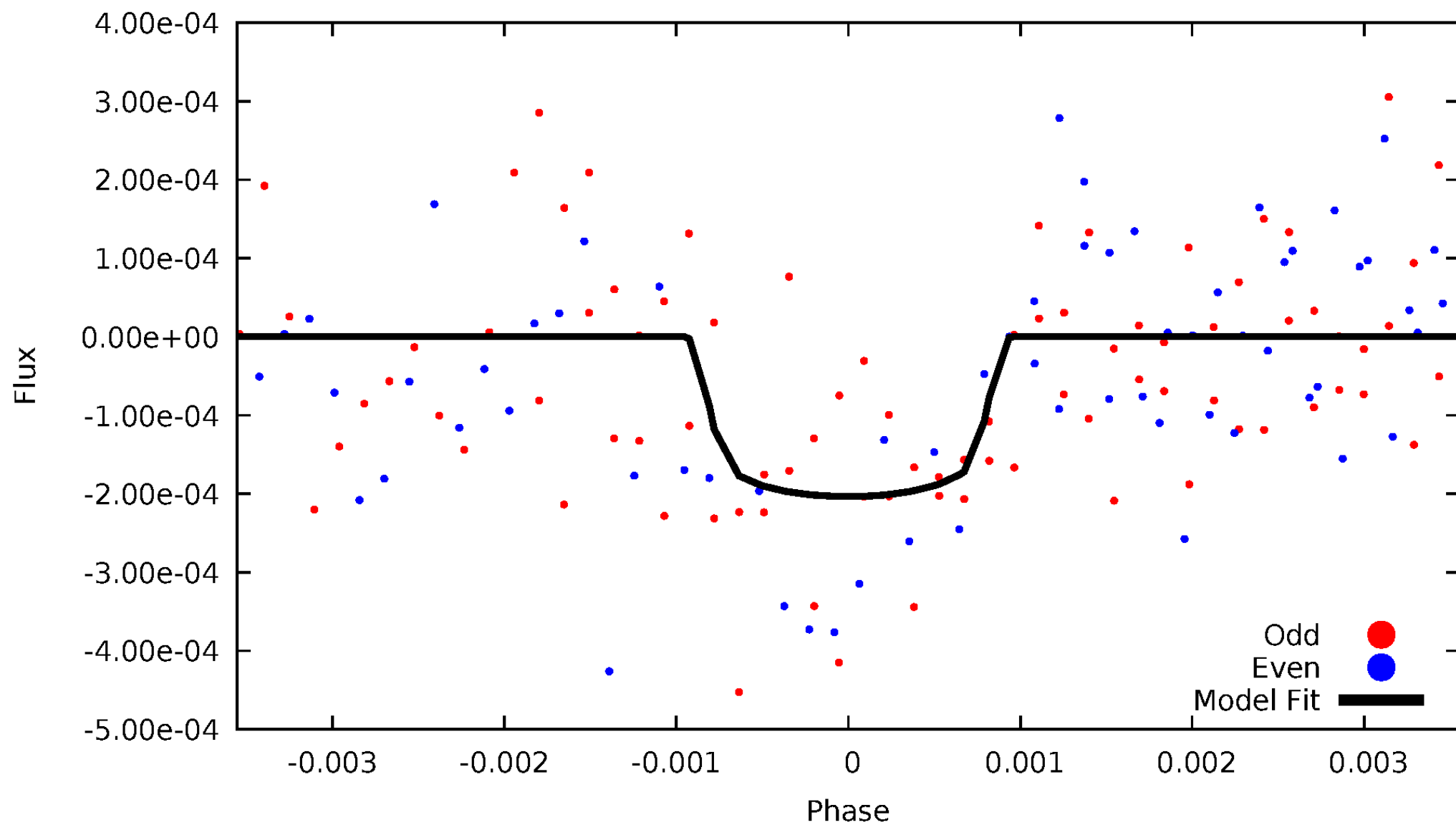


TCE 009284487-08



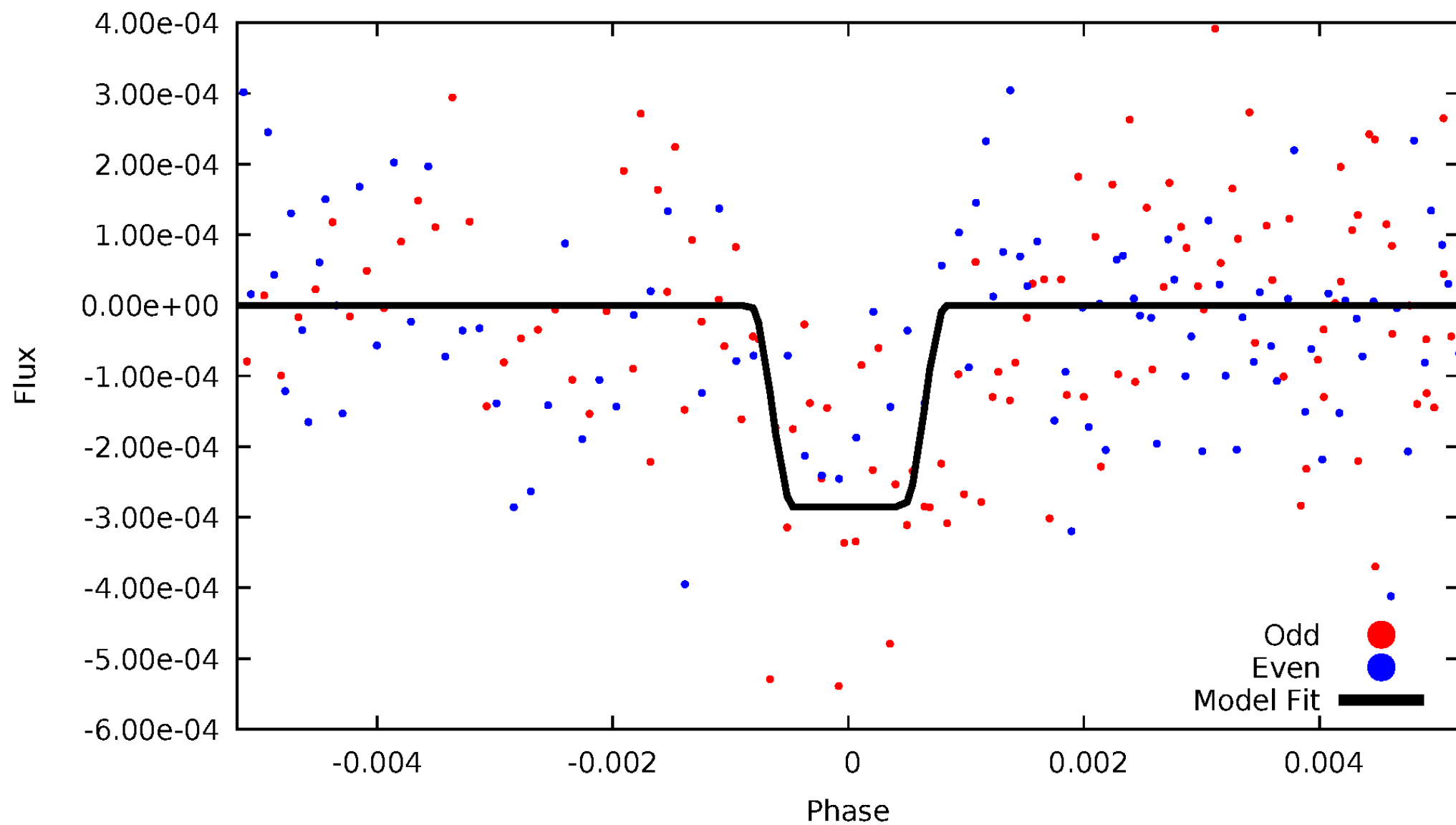
DV Odd/Even

TCE 009284487-08



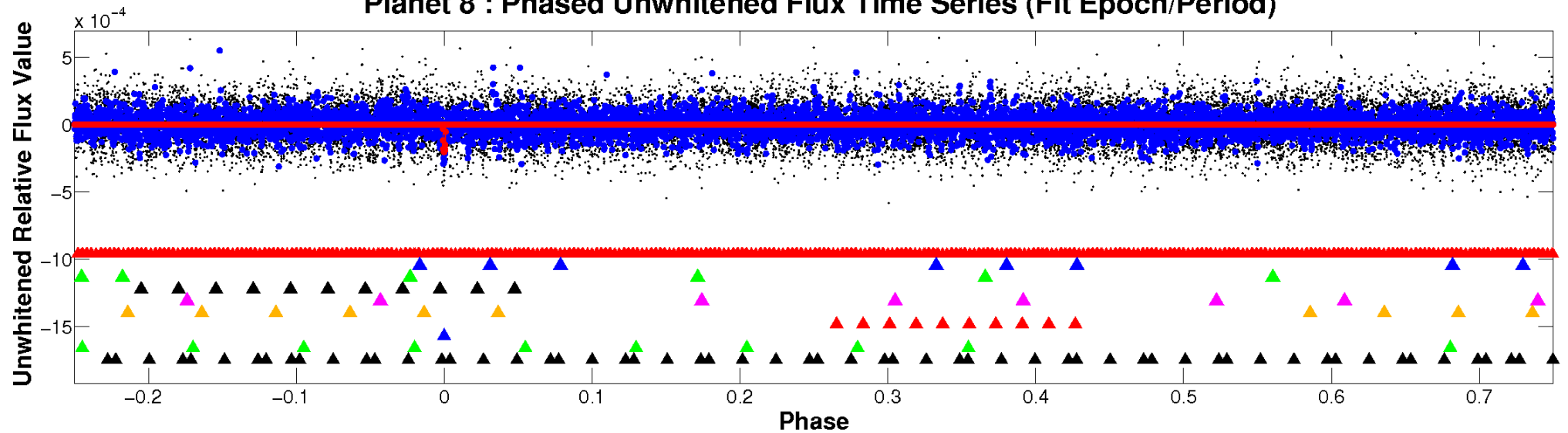
ALT Odd/Even

TCE 009284487-08

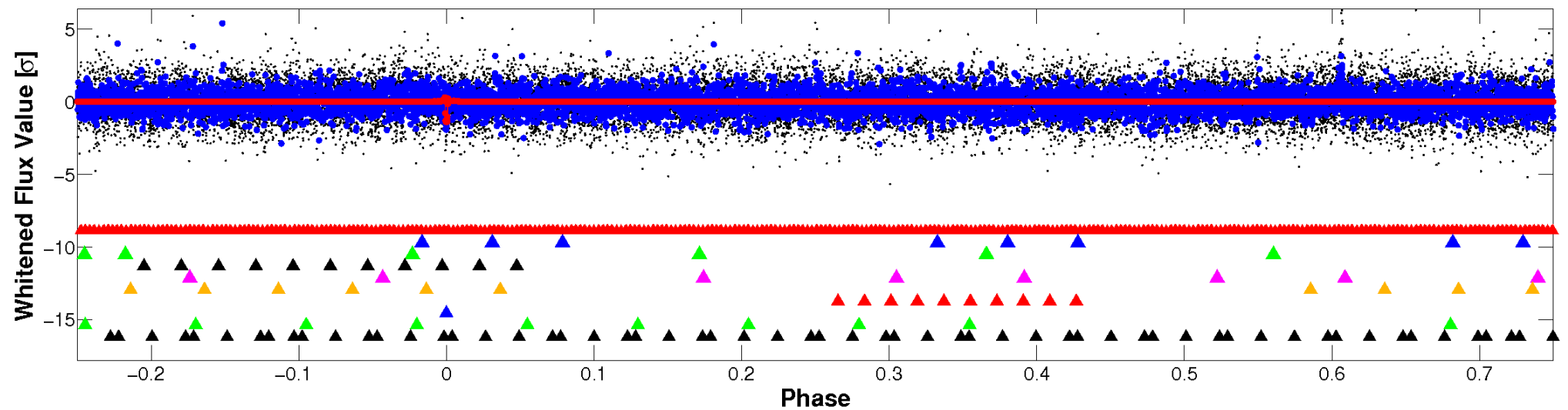


Non-Whitened Vs. Whitened Light Curve

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

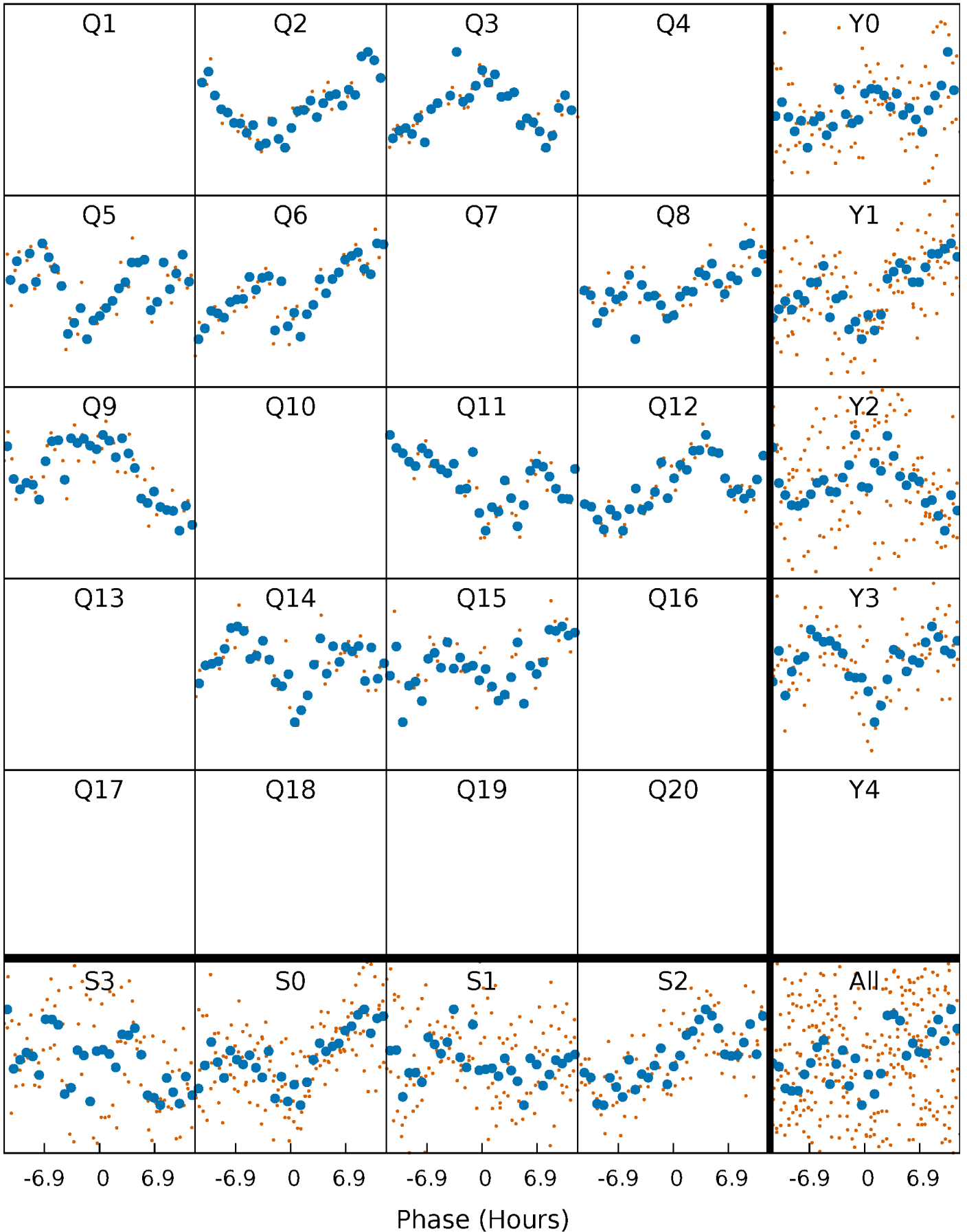


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



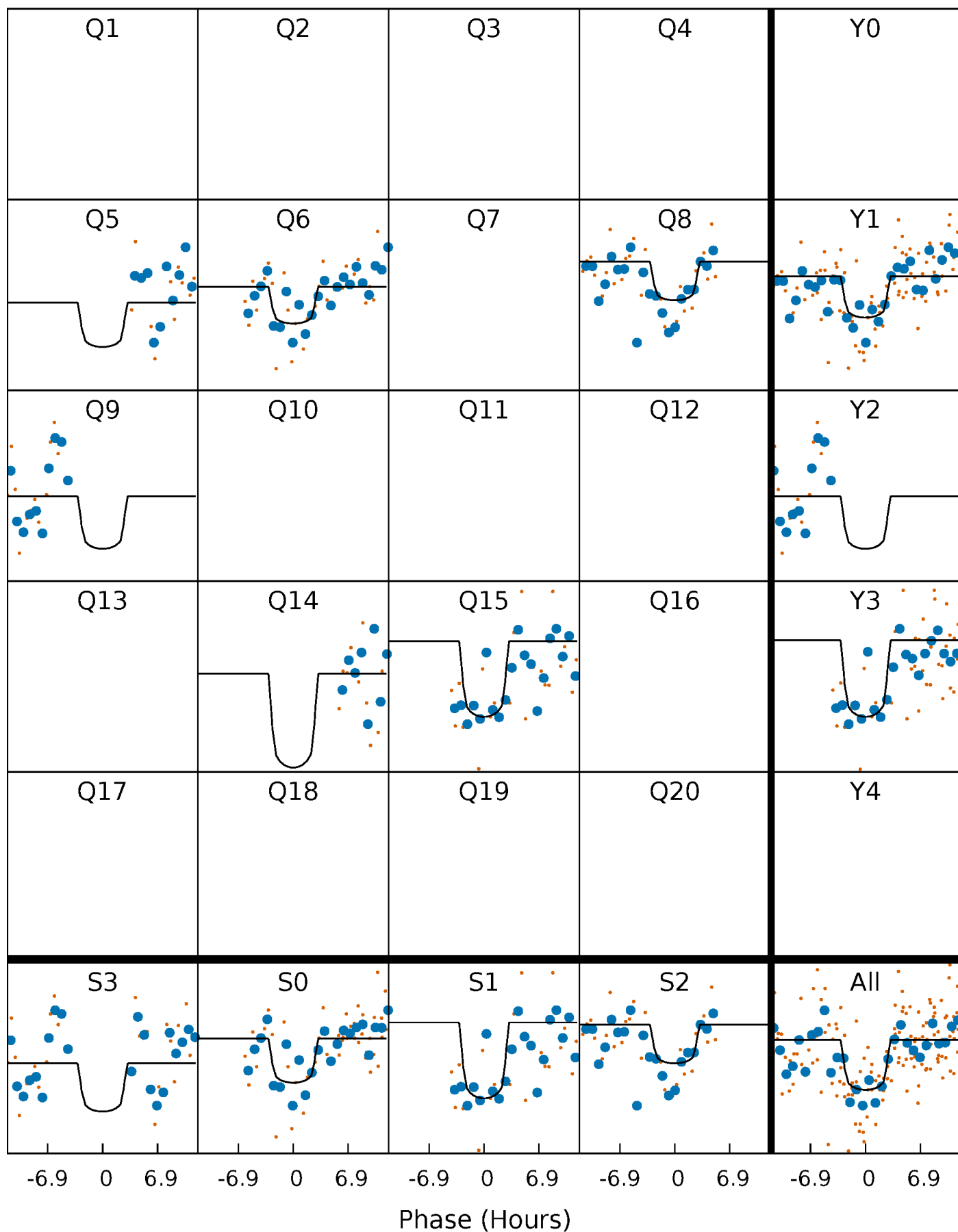
PDC Quarter-Phased Transit Curves

TCE 009284487-08 P=140.562117 Days $T_0=193.028584$ (BKJD)



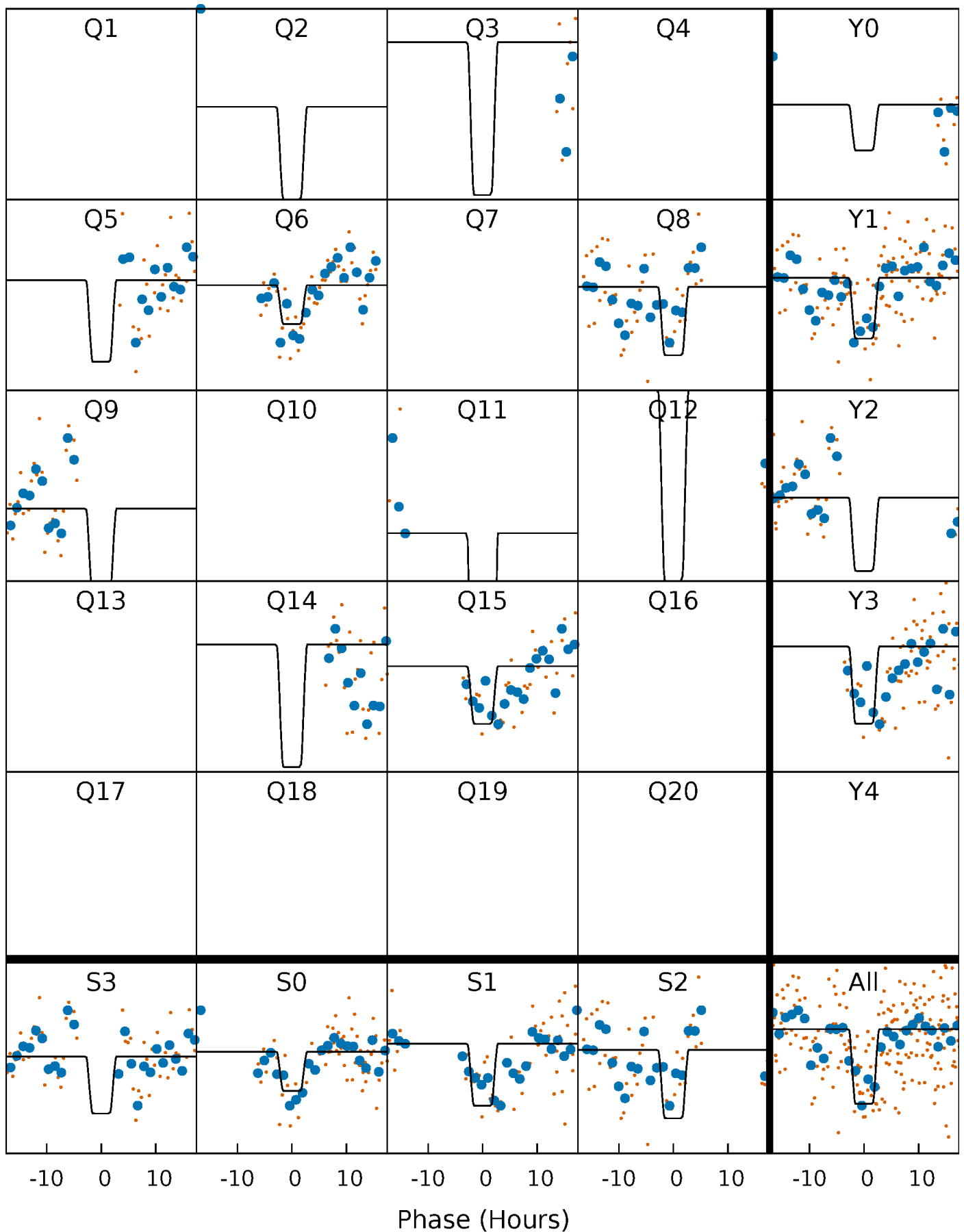
DV Quarter-Phased Transit Curves

TCE 009284487-08 P=140.562117 Days $T_0=193.028584$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

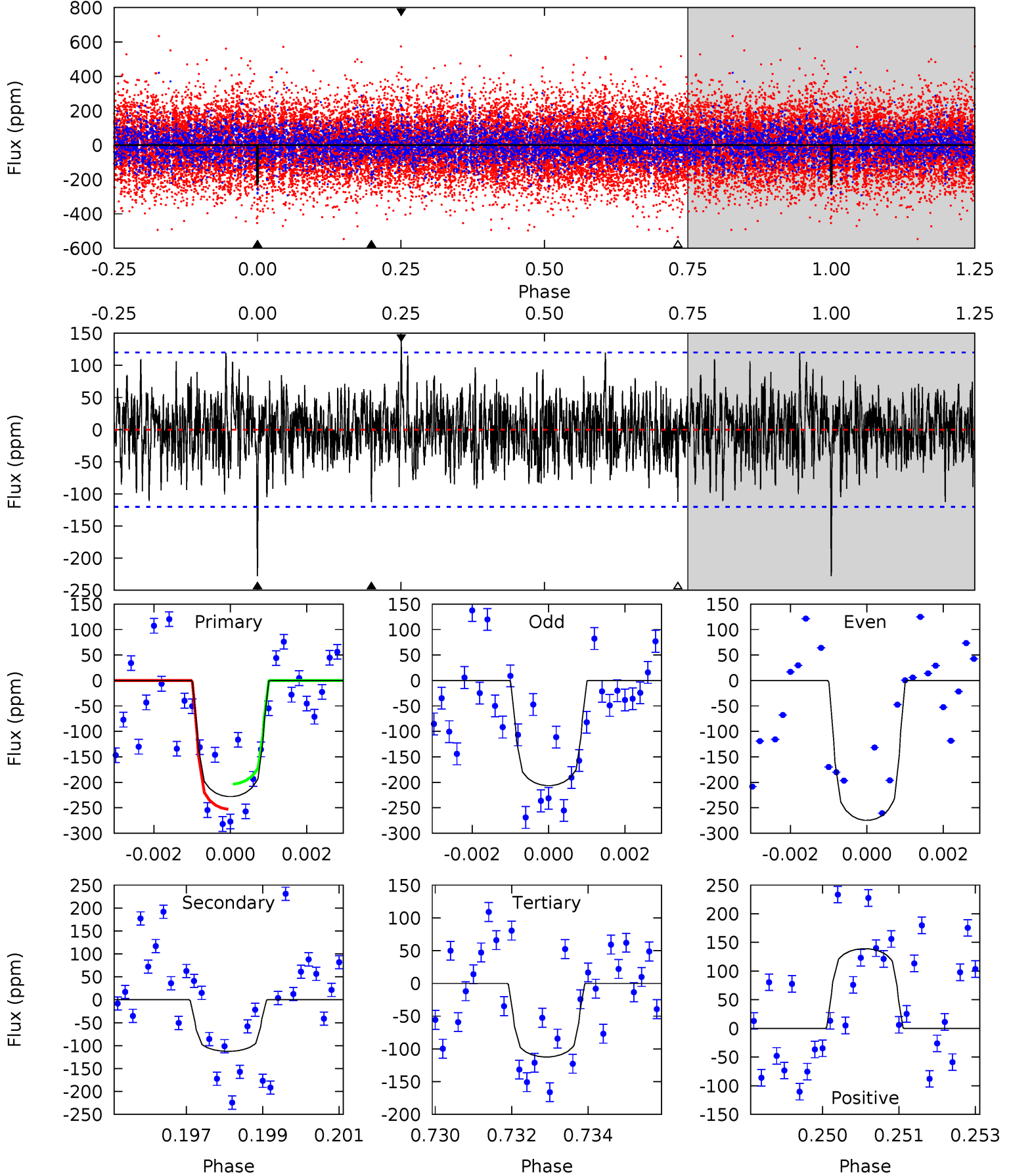
TCE 009284487-08 P=140.557630 Days $T_0=193.046070$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-08, P = 140.562117 Days, E = 52.466467 Days

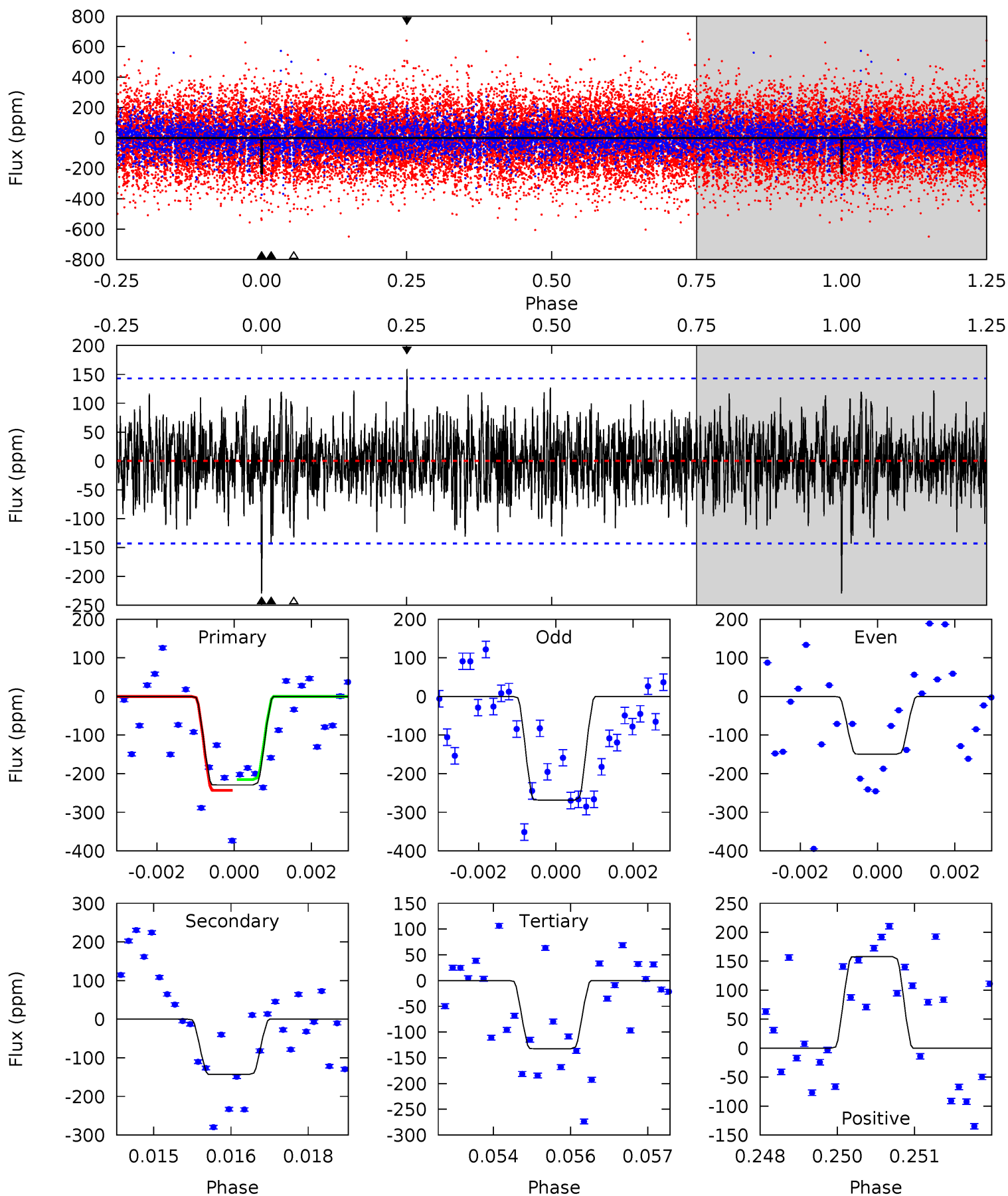
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	4.99	4.99	6.18	5.34	3.11	1.57	5.14	3.95	0.01	-1.18	1.40	1.07	0.38	1.10



Alt Model-Shift Uniqueness Test

009284487-08, P = 140.557630 Days, E = 52.488440 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.60	5.36	4.96	5.92	5.36	3.15	1.55	3.63	2.68	0.40	-0.56	2.08	1.18	0.41	0.53



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-112 ± 23	$2.54^{+1.14}_{-1.05}$	706^{+56}_{-38}	5961^{+2026}_{-943}	3365^{+6917}_{-1840}
Alt.	-143 ± 27	$2.83^{+1.17}_{-1.07}$	708^{+58}_{-39}	5963^{+1546}_{-844}	3412^{+5192}_{-1720}

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

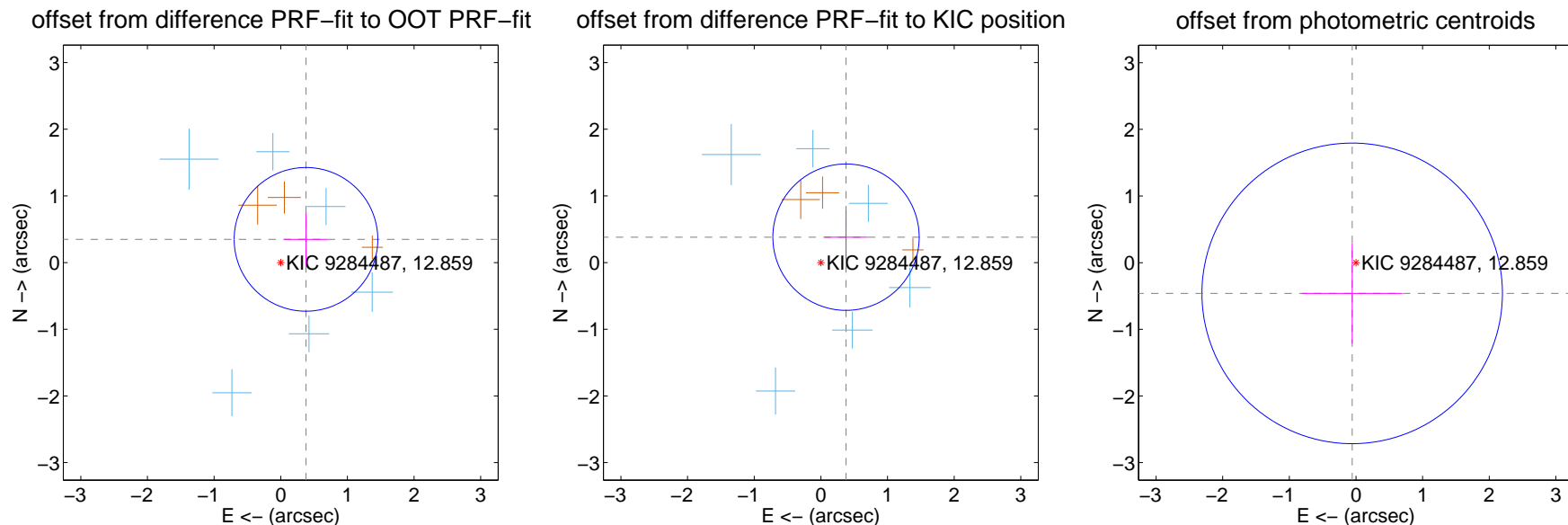
DV Centroid Data

Supplemental centroid analysis for 009284487-08. Kepler magnitude: 12.86. Transit SNR 7.38

There are 6 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.515 ± 0.359	1.43	-0.379 ± 0.326	0.349 ± 0.395
PRF-fit source offset from KIC position	0.537 ± 0.366	1.47	-0.378 ± 0.324	0.381 ± 0.403
photometric centroid source offset	0.46 ± 0.75	0.62	0.06 ± 0.75	-0.46 ± 0.75



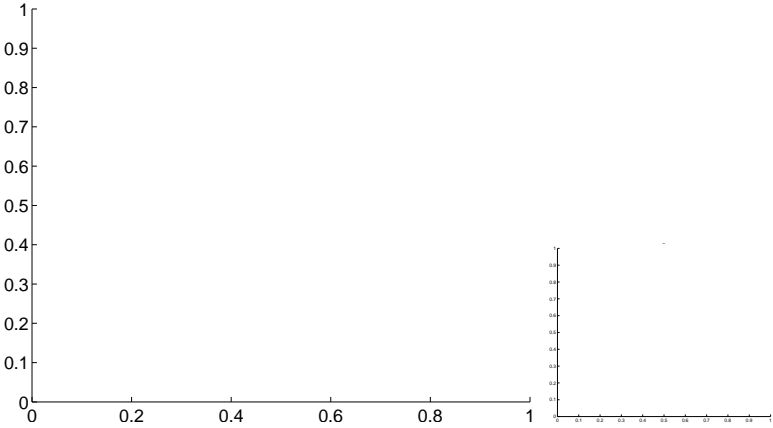
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

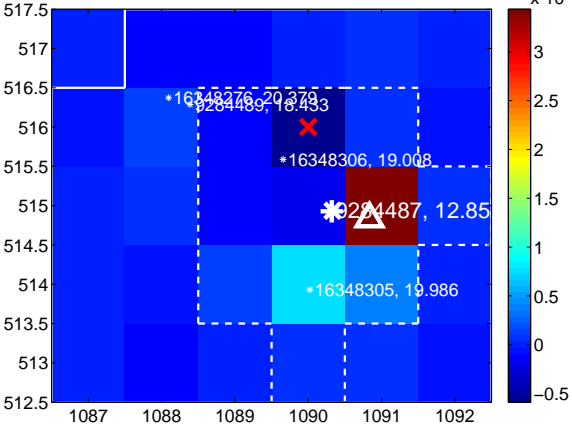
Q1 no difference image



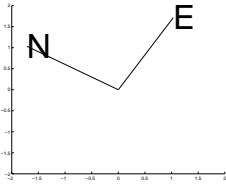
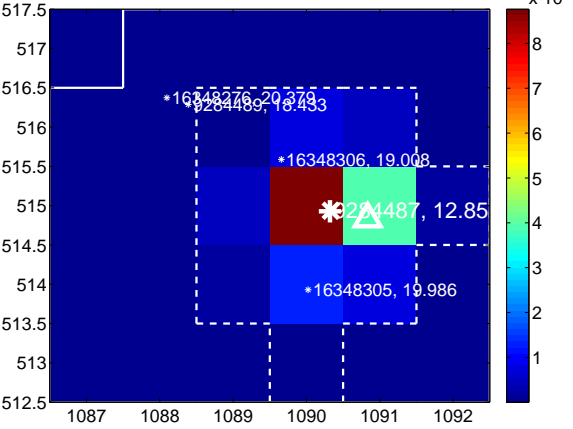
Q1 no OOT image



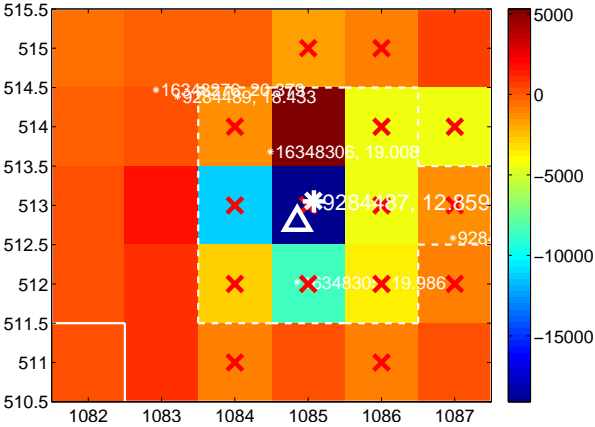
Q2 difference image



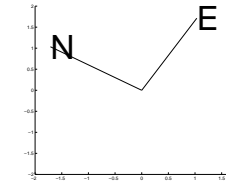
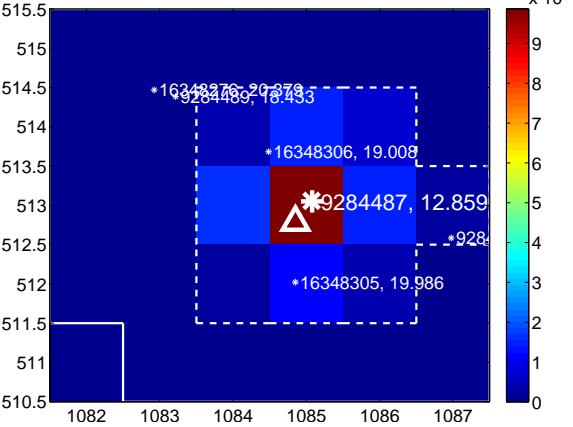
Q2 OOT image



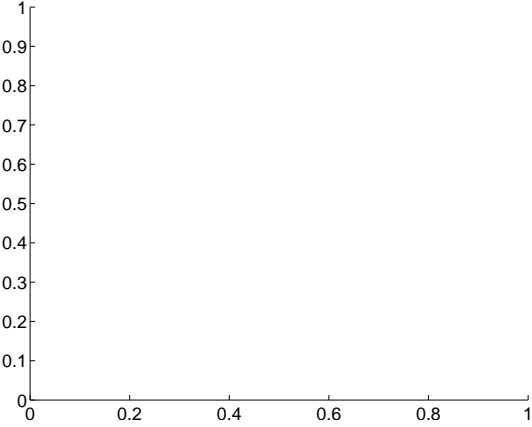
Q3 difference image. Poor Quality



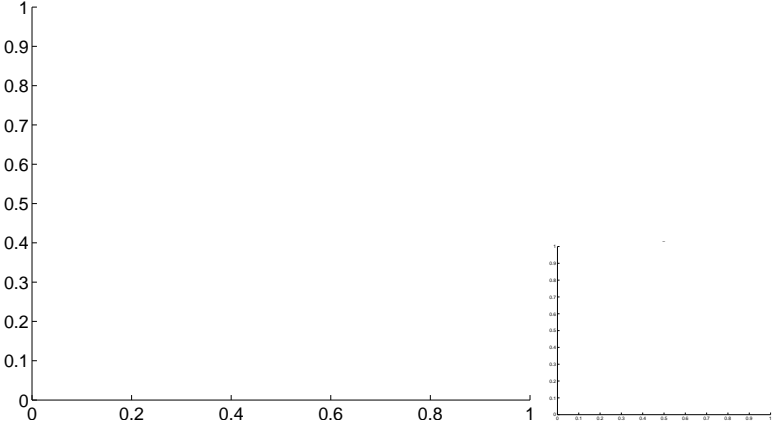
Q3 OOT image



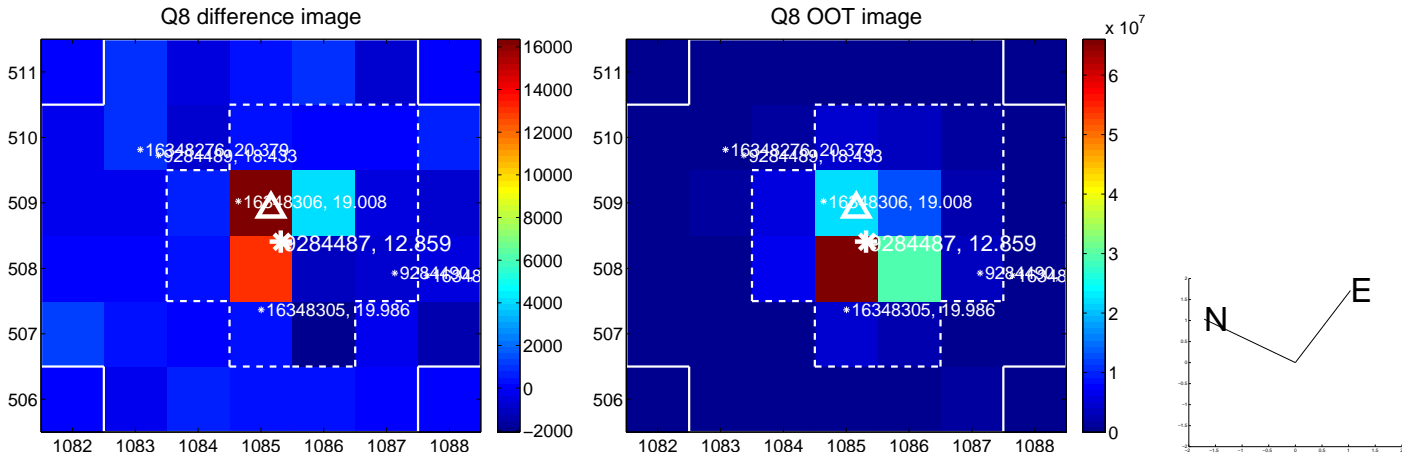
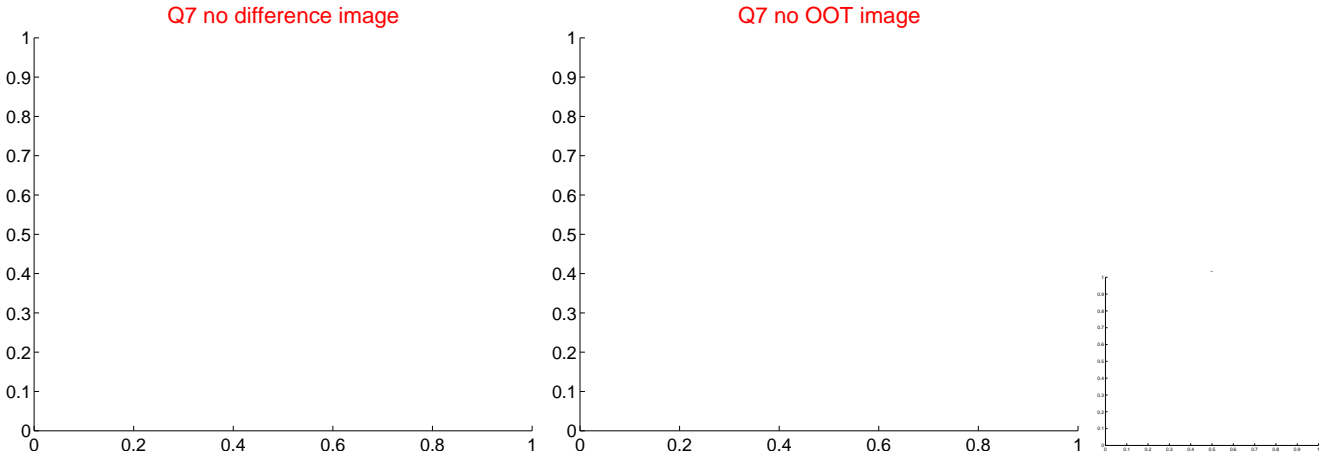
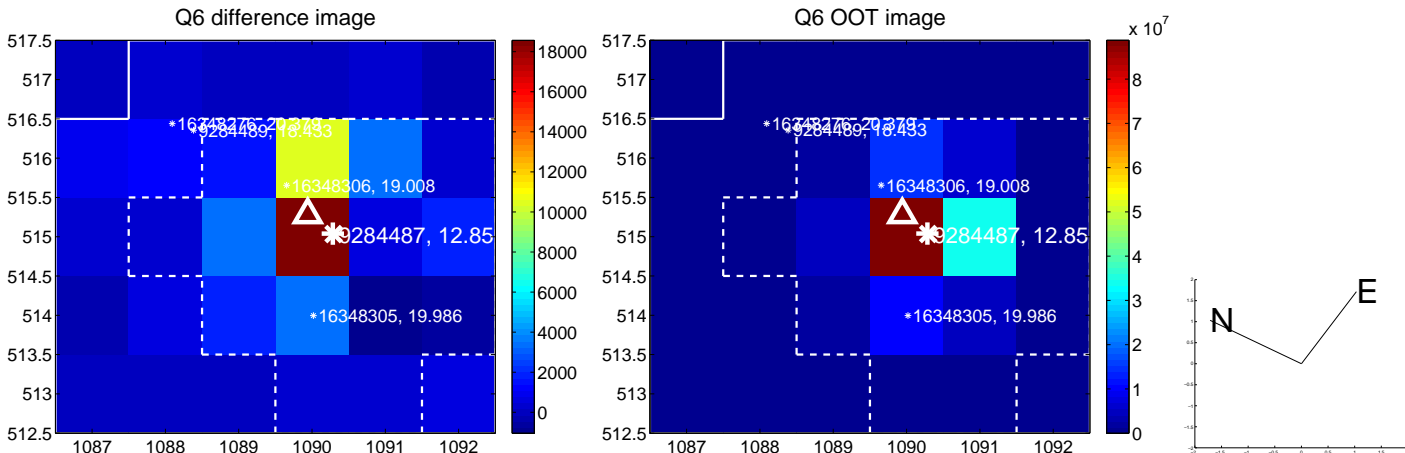
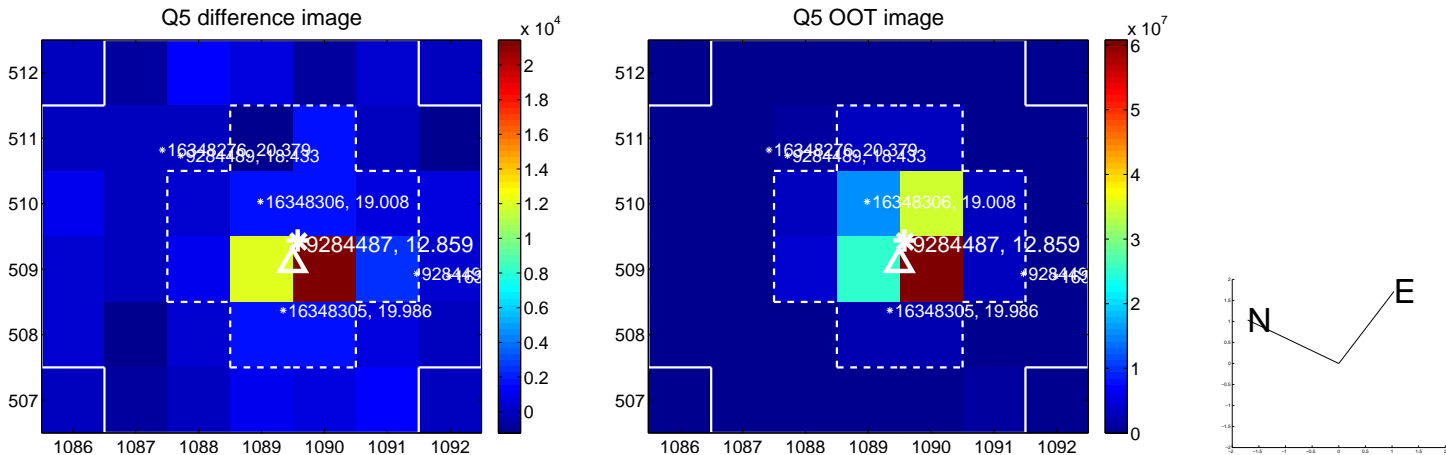
Q4 no difference image



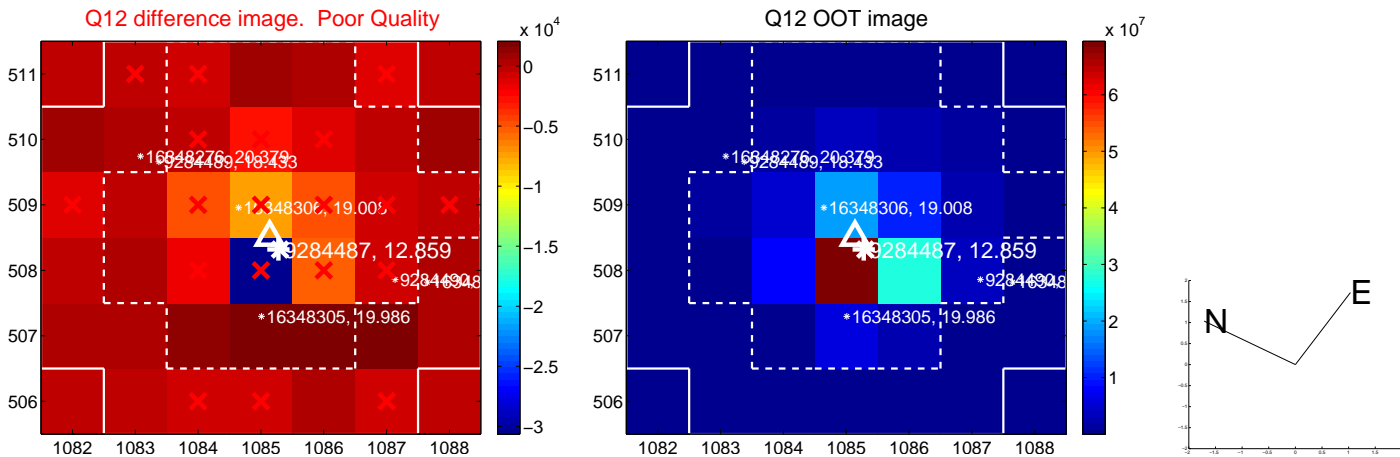
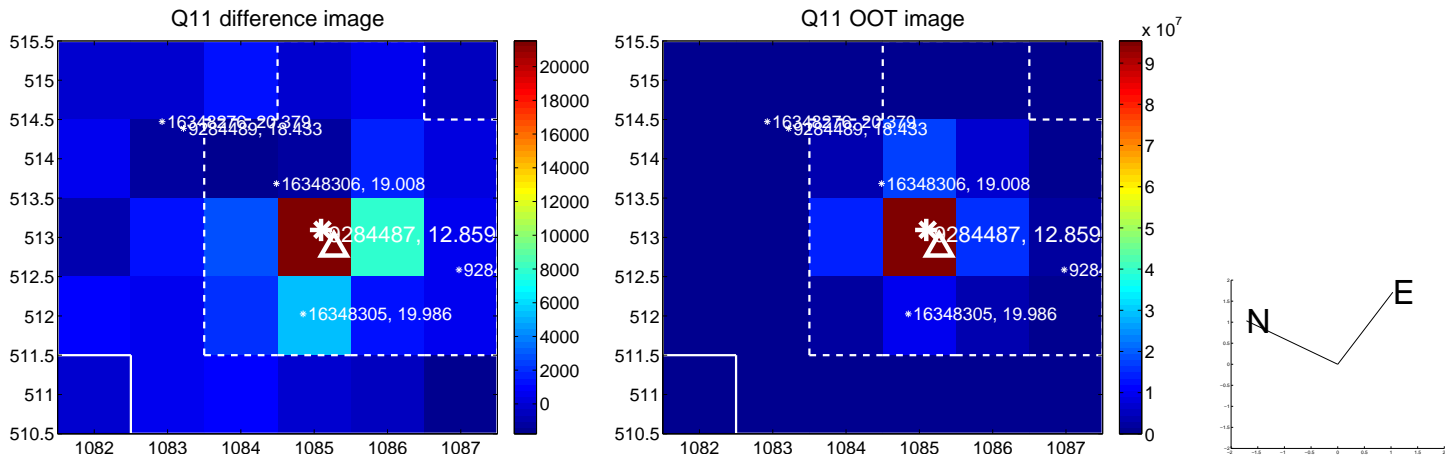
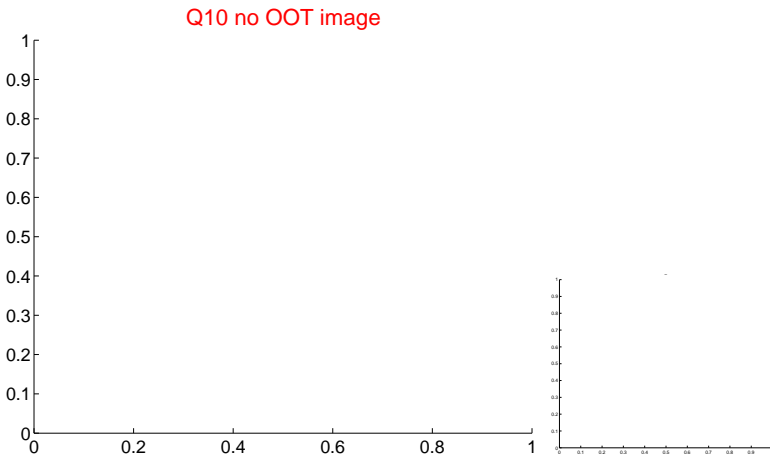
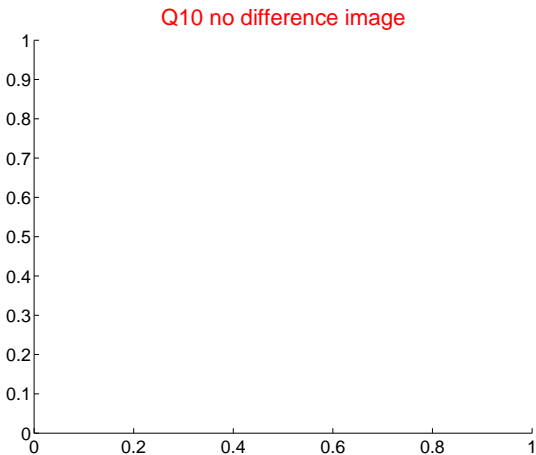
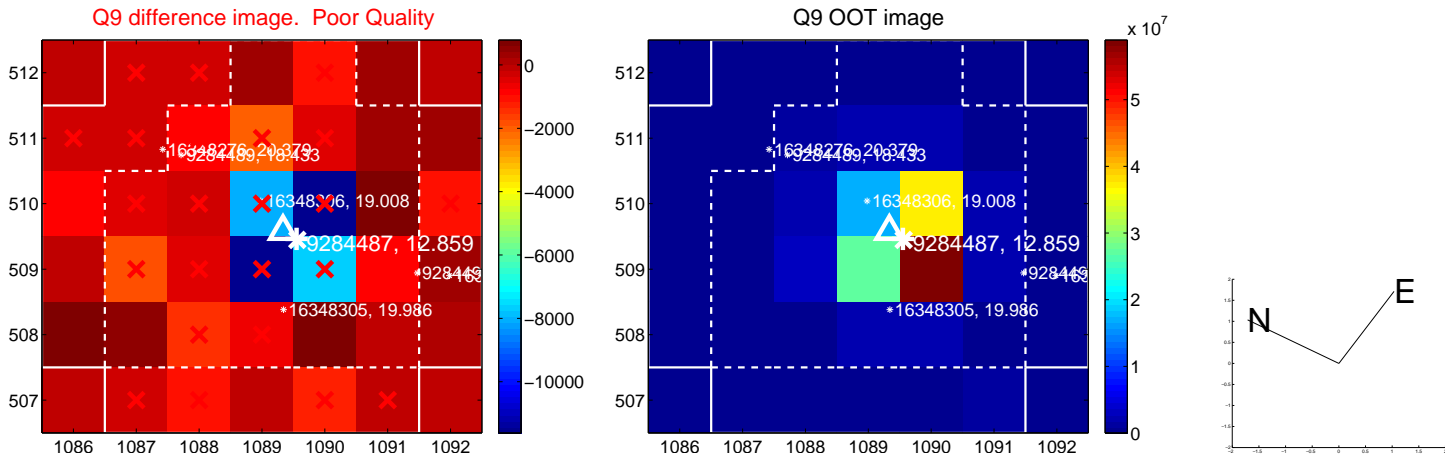
Q4 no OOT image



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.

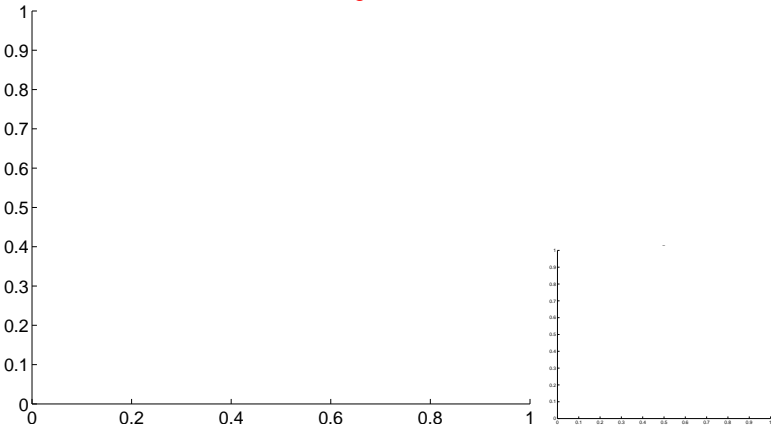


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

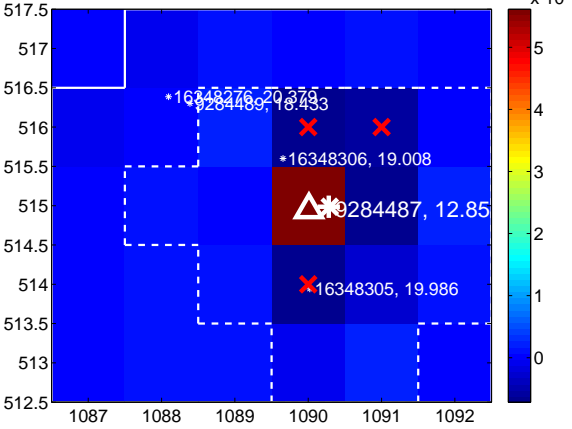
Q13 no difference image



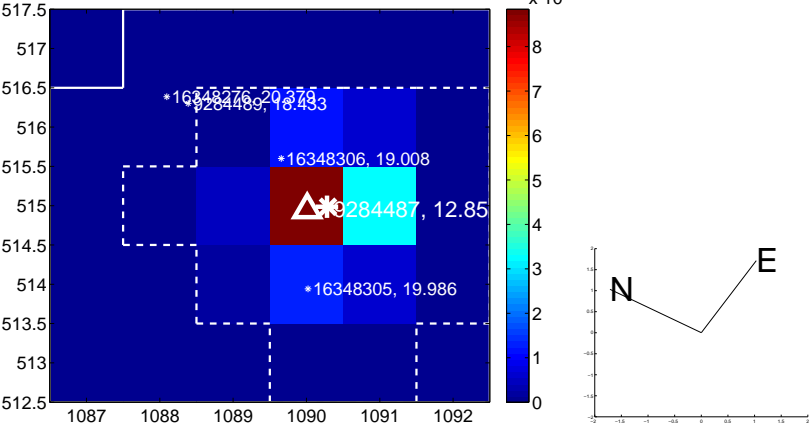
Q13 no OOT image



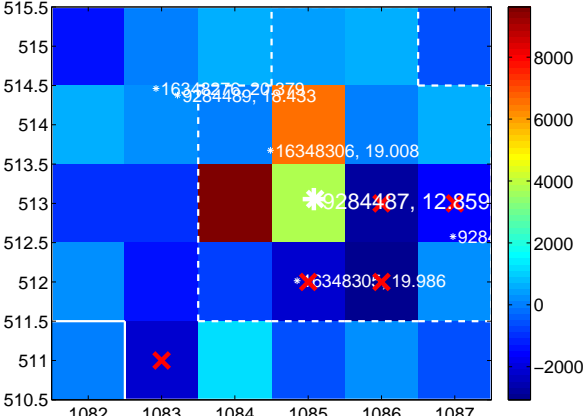
Q14 difference image



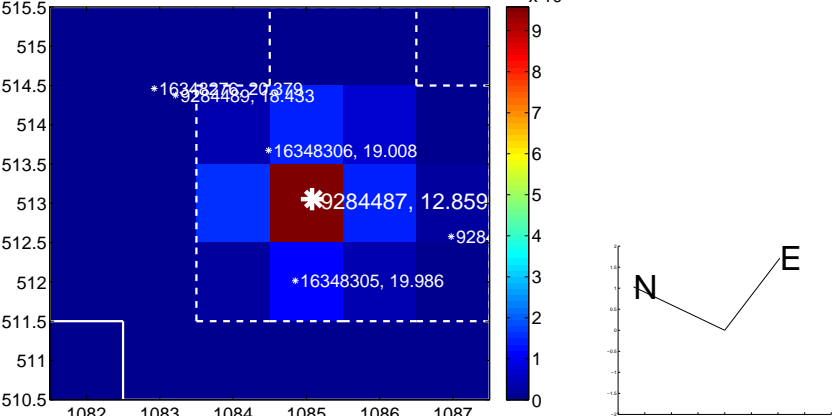
Q14 OOT image



Q15 difference image. Poor Quality



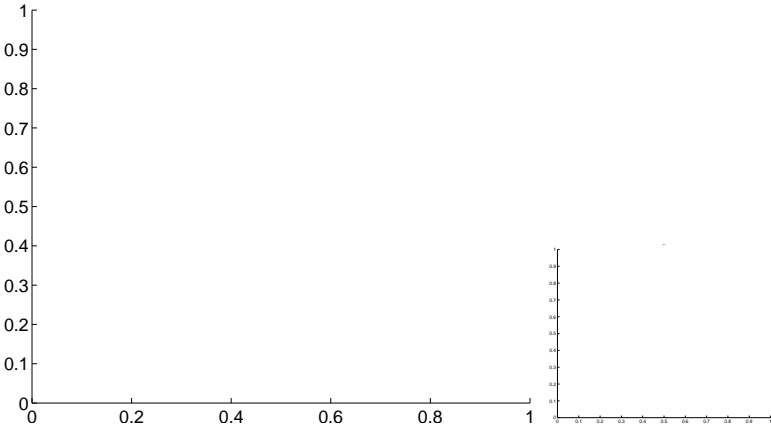
Q15 OOT image



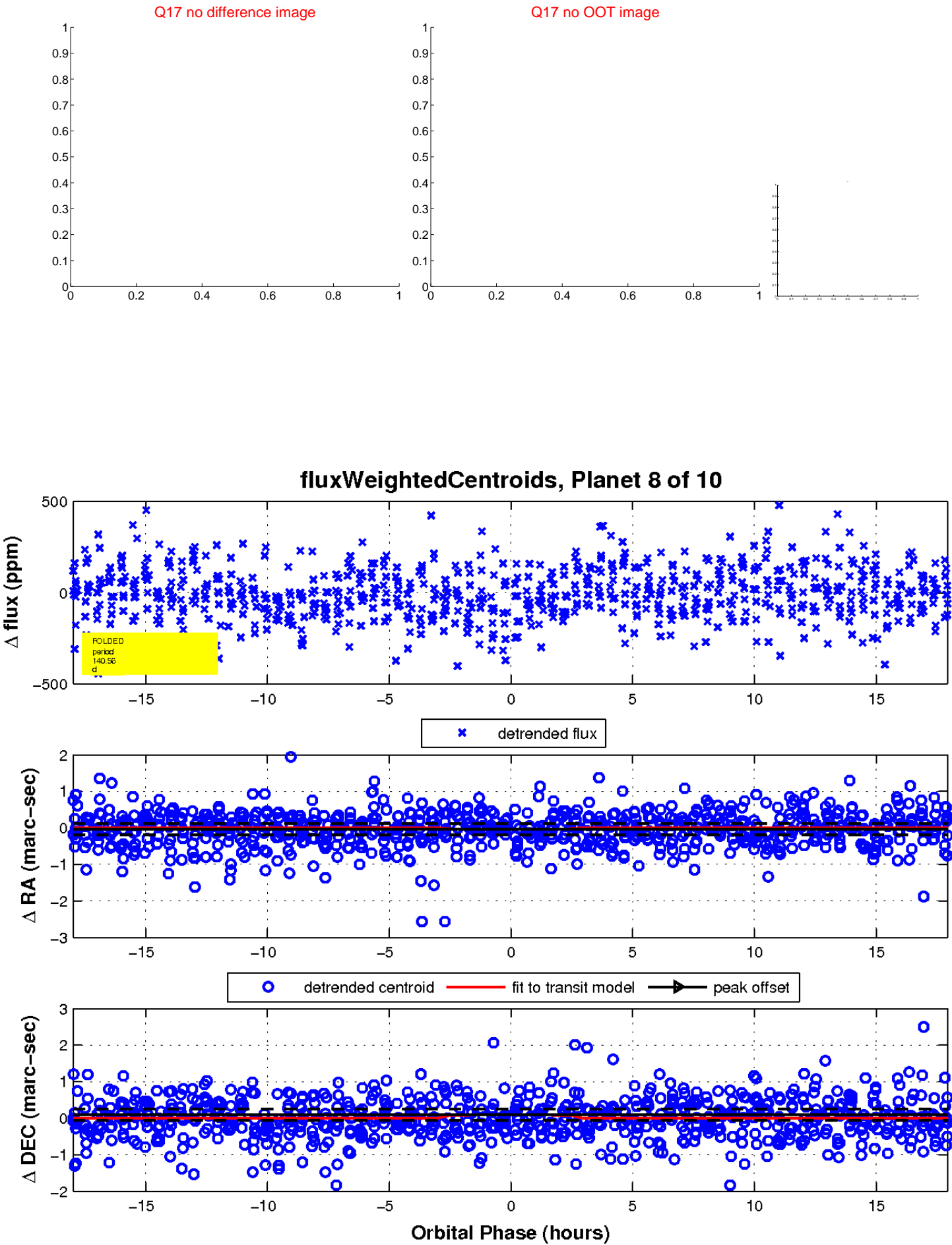
Q16 no difference image



Q16 no OOT image

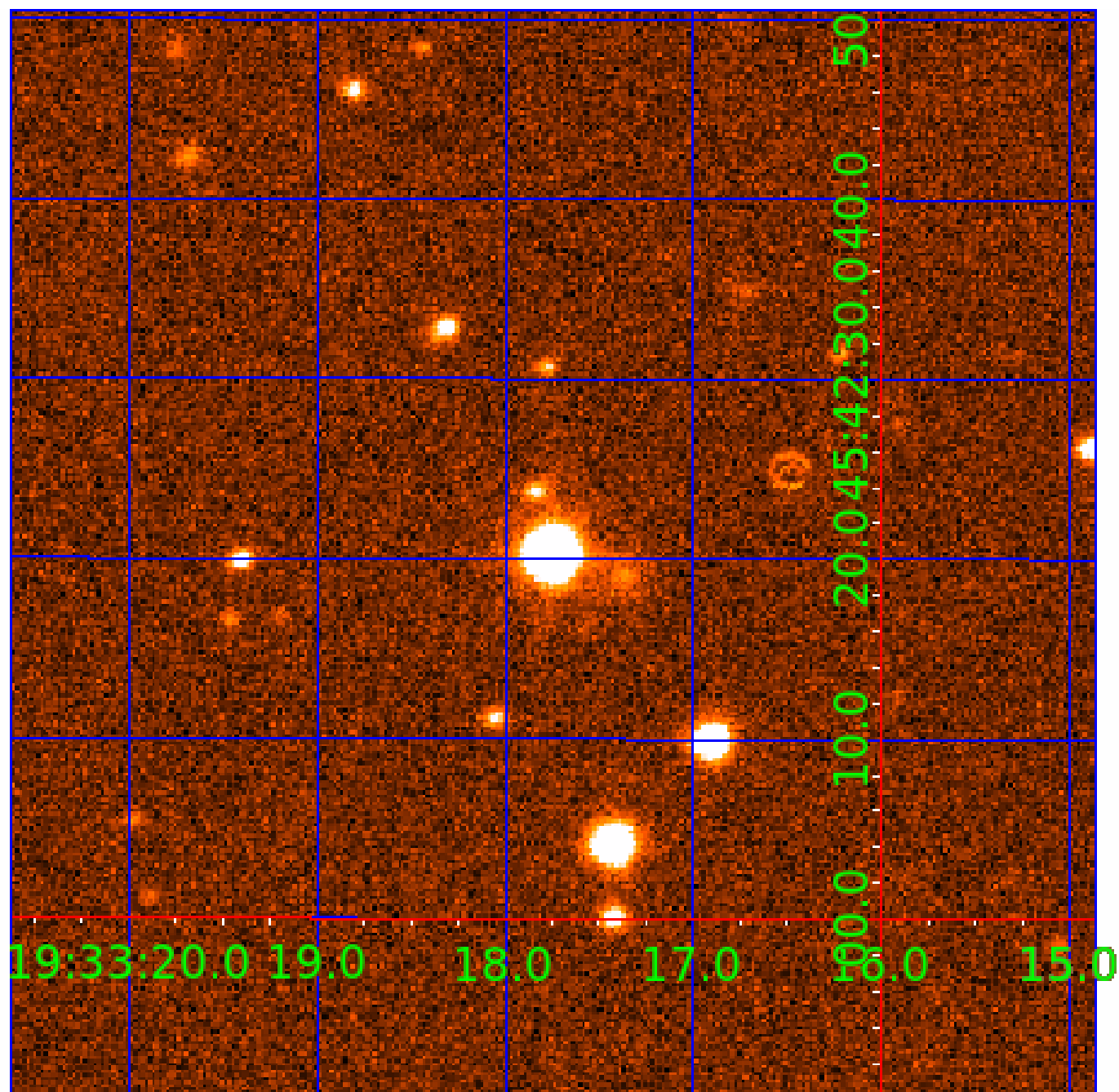


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

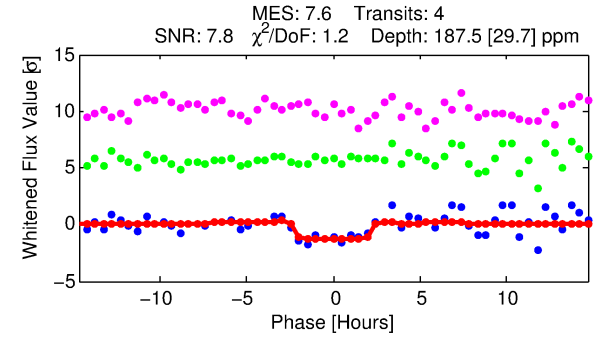
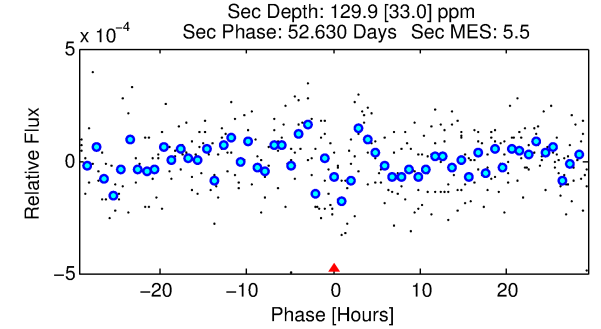
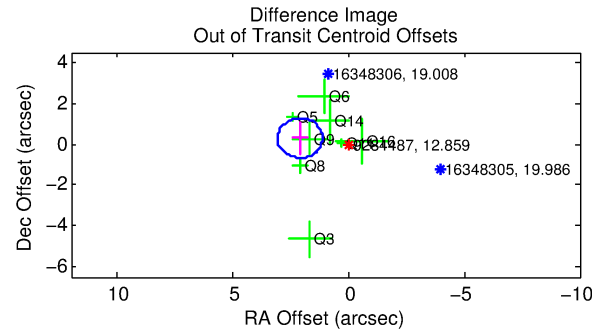
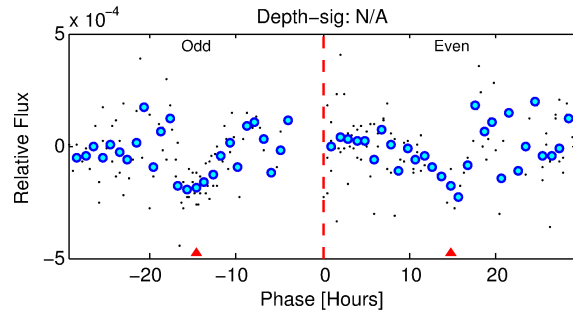
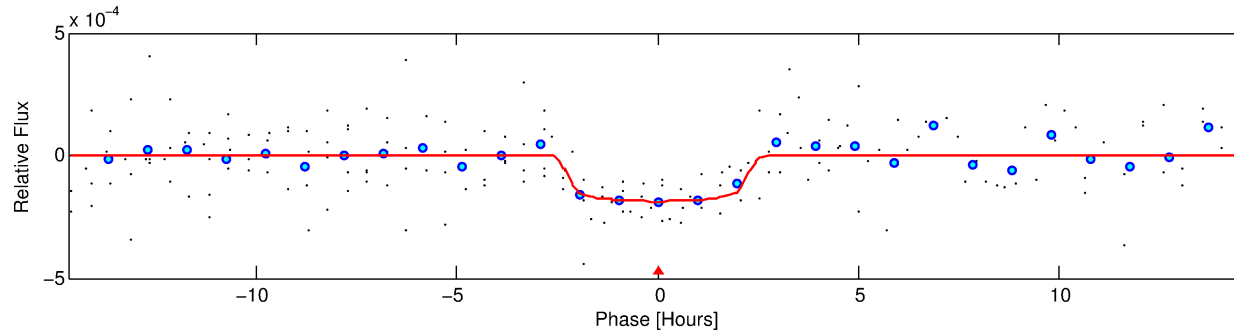
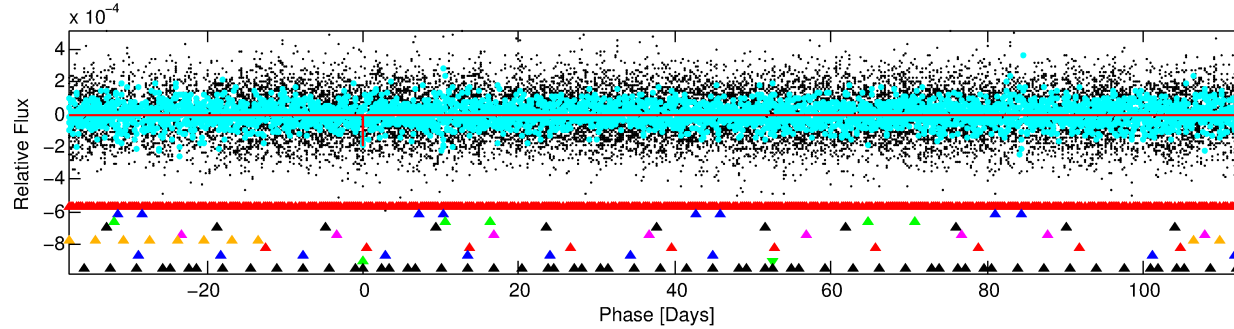
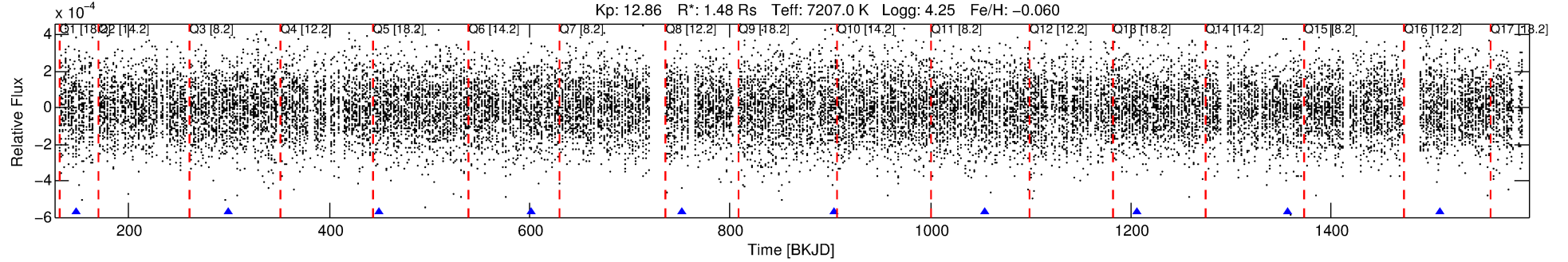
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-09

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 9 of 10 Period: 151.090 d



DV Fit Results:

Period = 151.09020 [0.00199] d
Epoch = 148.1003 [0.0135] BKJD
Rp/R* = 0.0144 [0.0046]
a/R* = 114.81 [217.66]
b = 0.89 [0.44]
Seff = 13.50 [5.64]
Teq = 489 [51] K
Rp = 2.33 [1.10] Re
a = 0.6262 [0.1750] AU
Ag = 5148.78 [4030.43] [1.28σ]
Teffp = 6402 [1115] K [5.30σ]

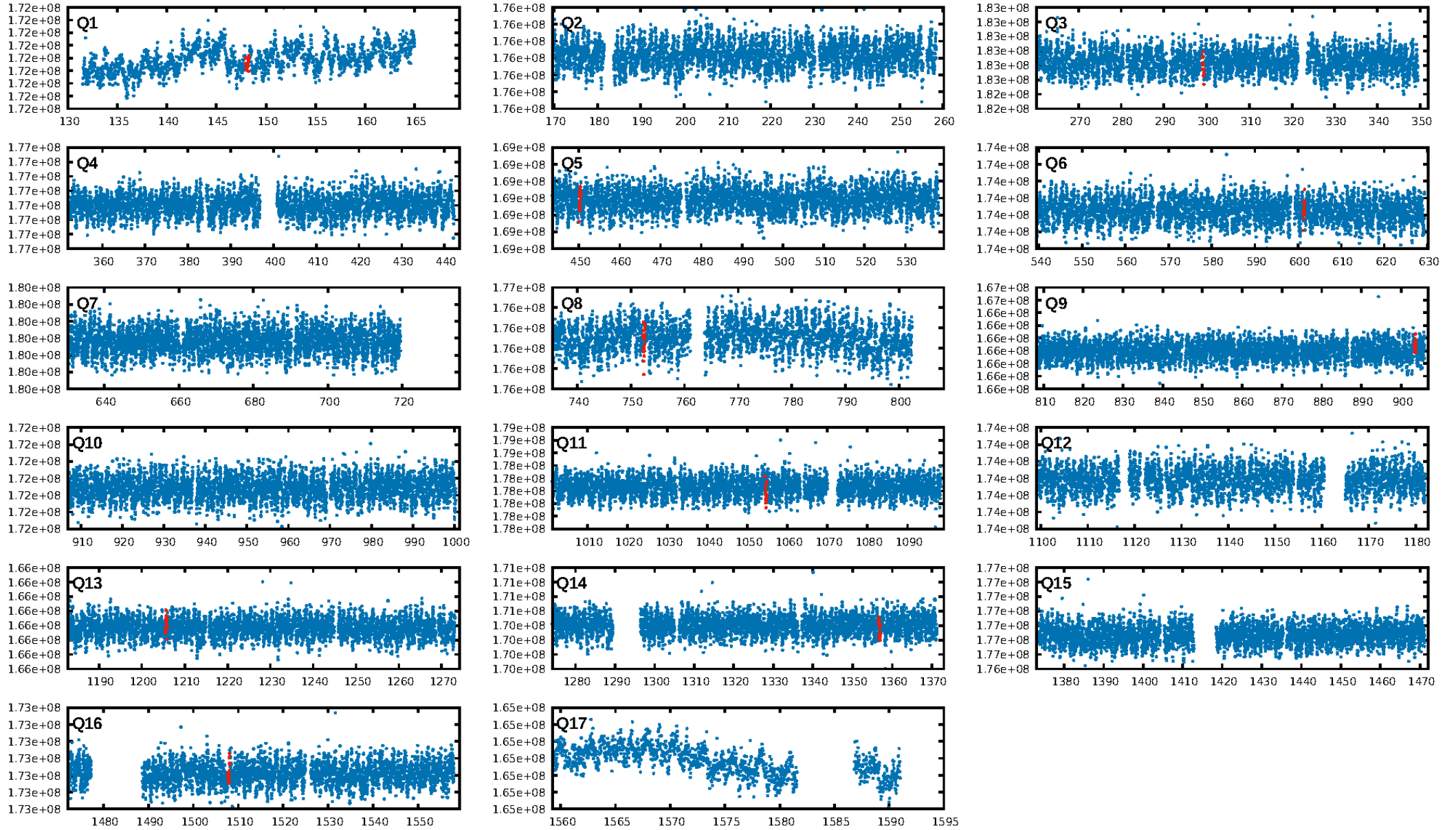
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.01σ]
LongPeriod-sig: 100.0% [41.00σ]
ModelChiSquare2-sig: 92.4%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 6.54e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.215
Centroid-sig: 3.2%
Centroid-so: 1.301 arcsec [1.42σ]
OotOffset-rm: 2.132 arcsec [6.58σ]
KicOffset-rm: 2.149 arcsec [6.03σ]
OotOffset-st: 2/2/2/2 [8]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.44 [4/9]

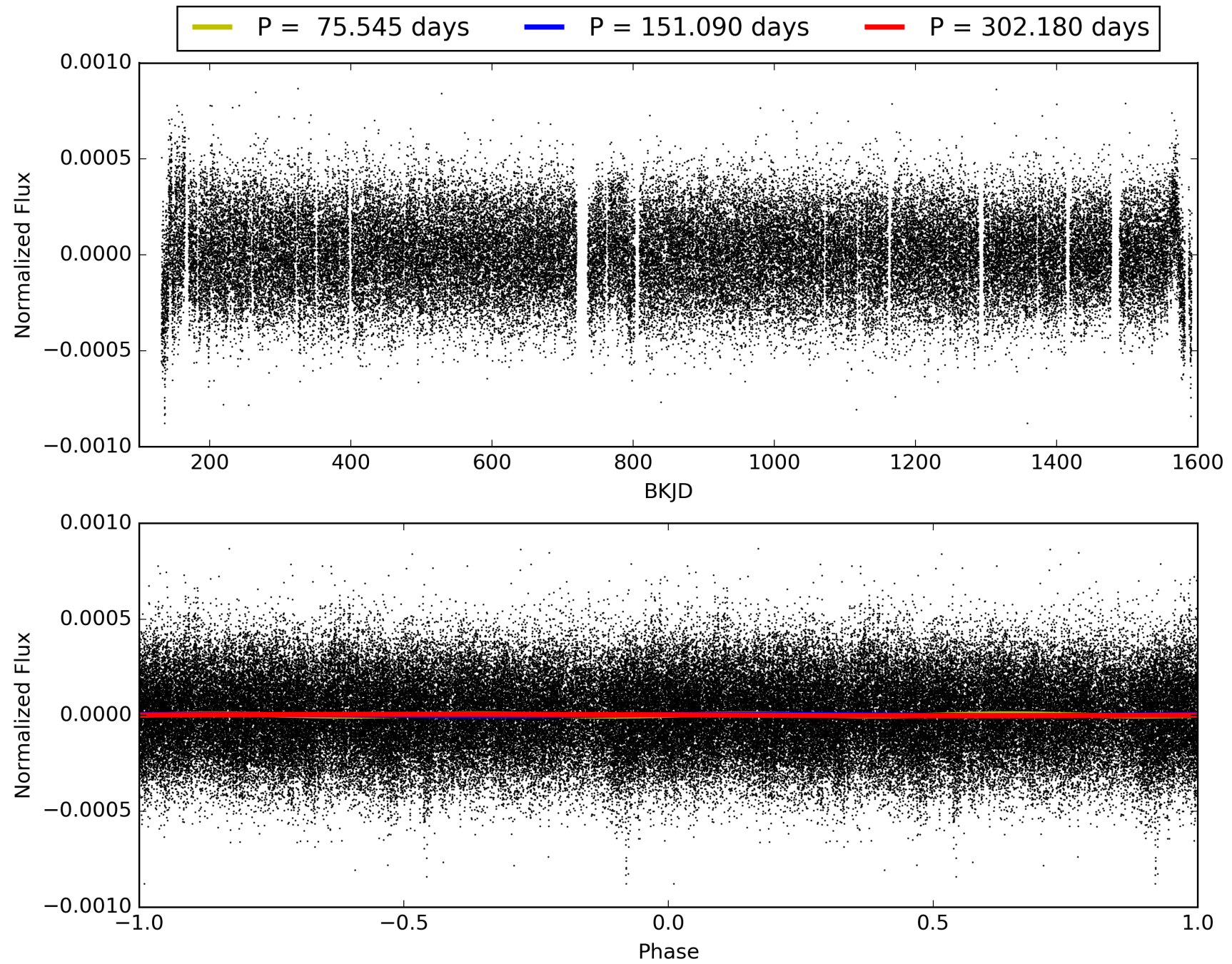
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:40:28 Z

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

TCE 009284487-09, PDC Light Curves

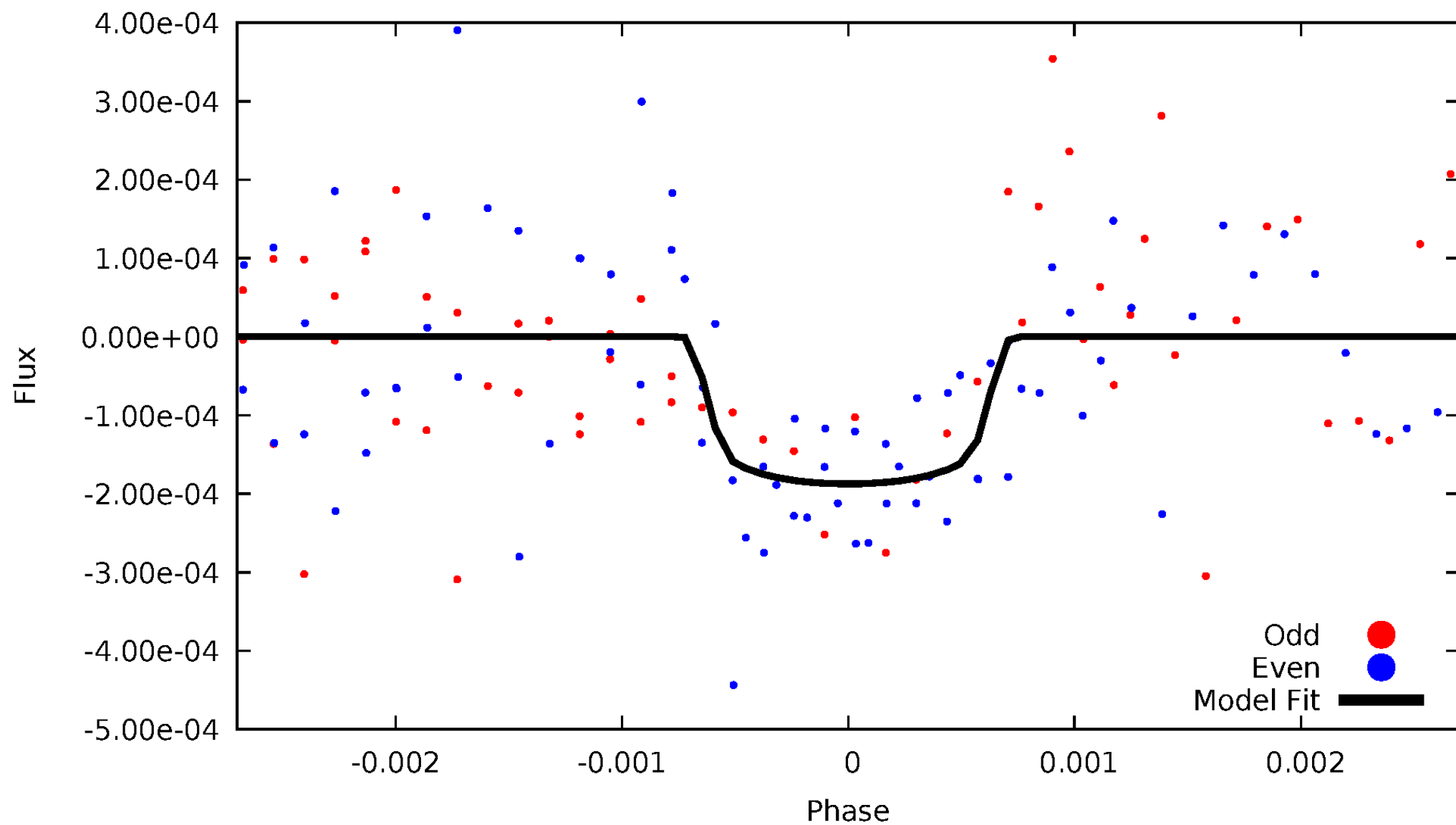


TCE 009284487-09



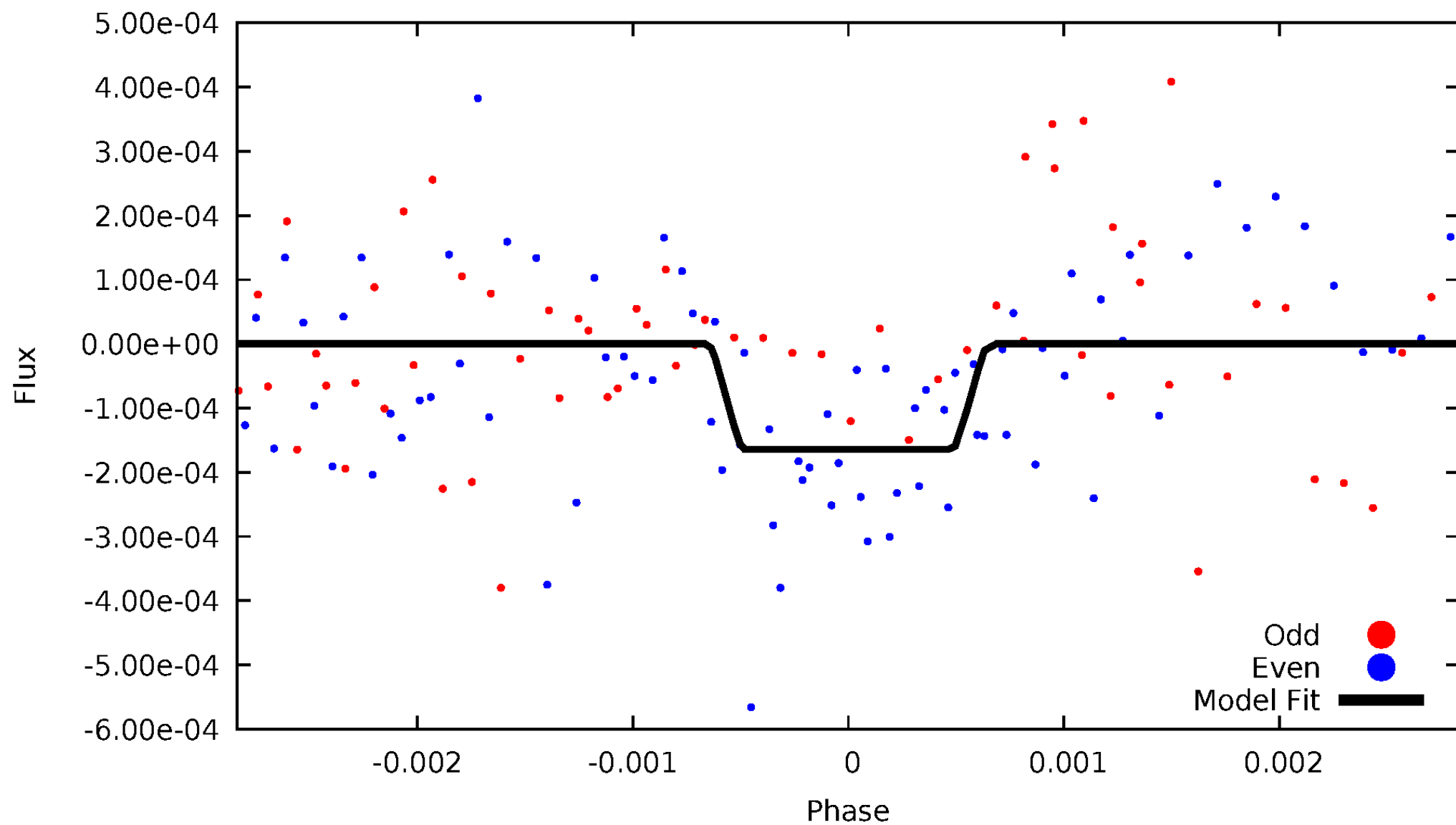
DV Odd/Even

TCE 009284487-09

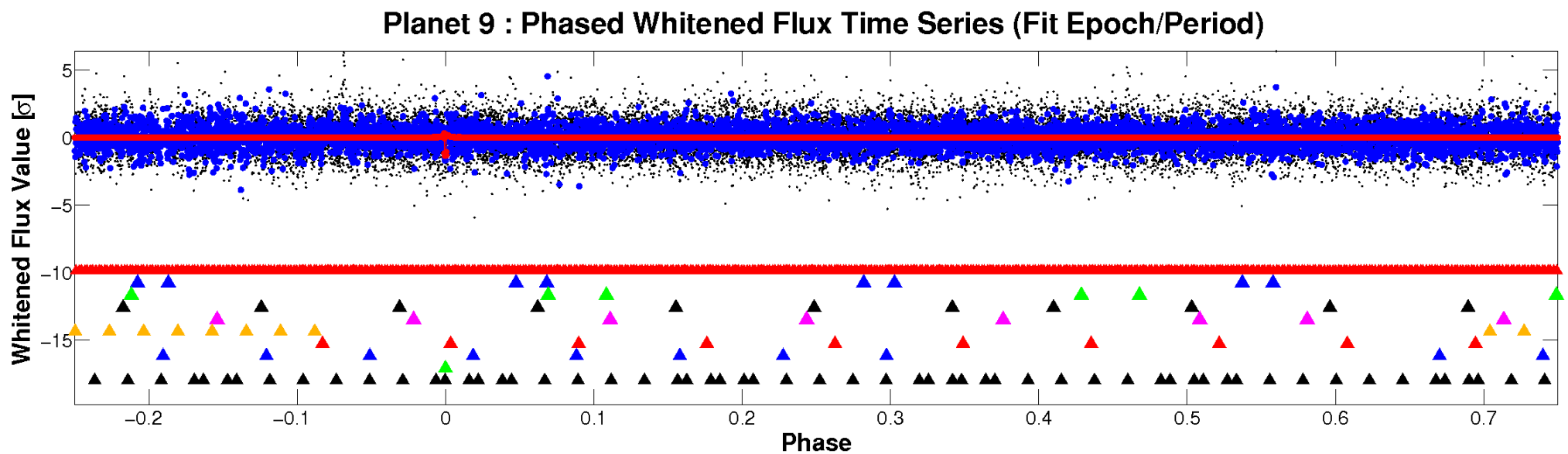
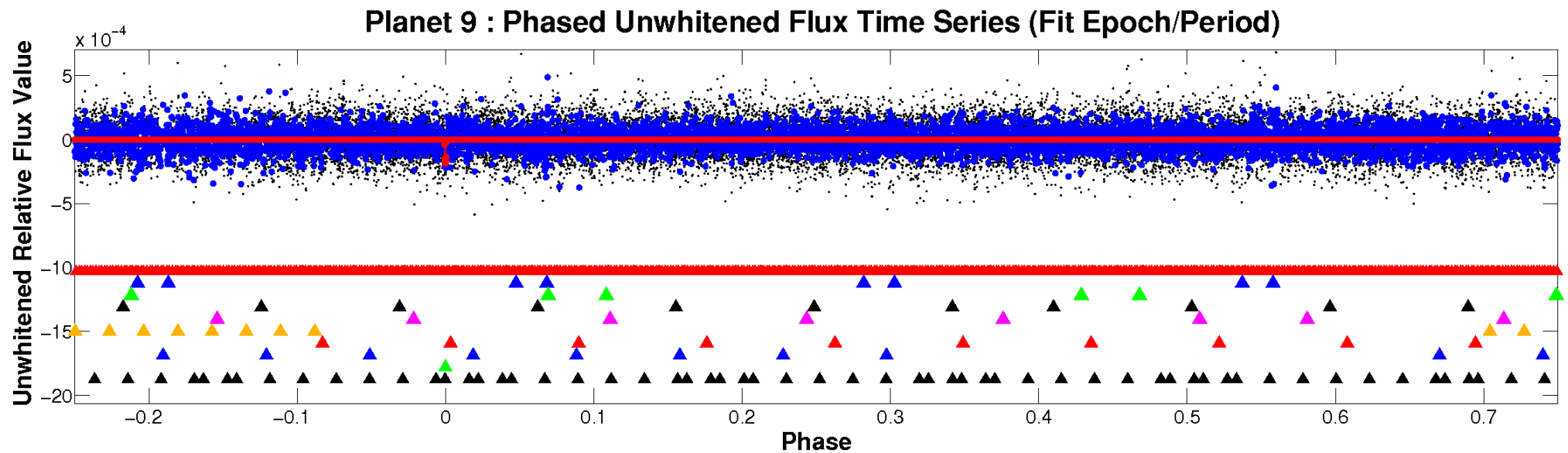


ALT Odd/Even

TCE 009284487-09

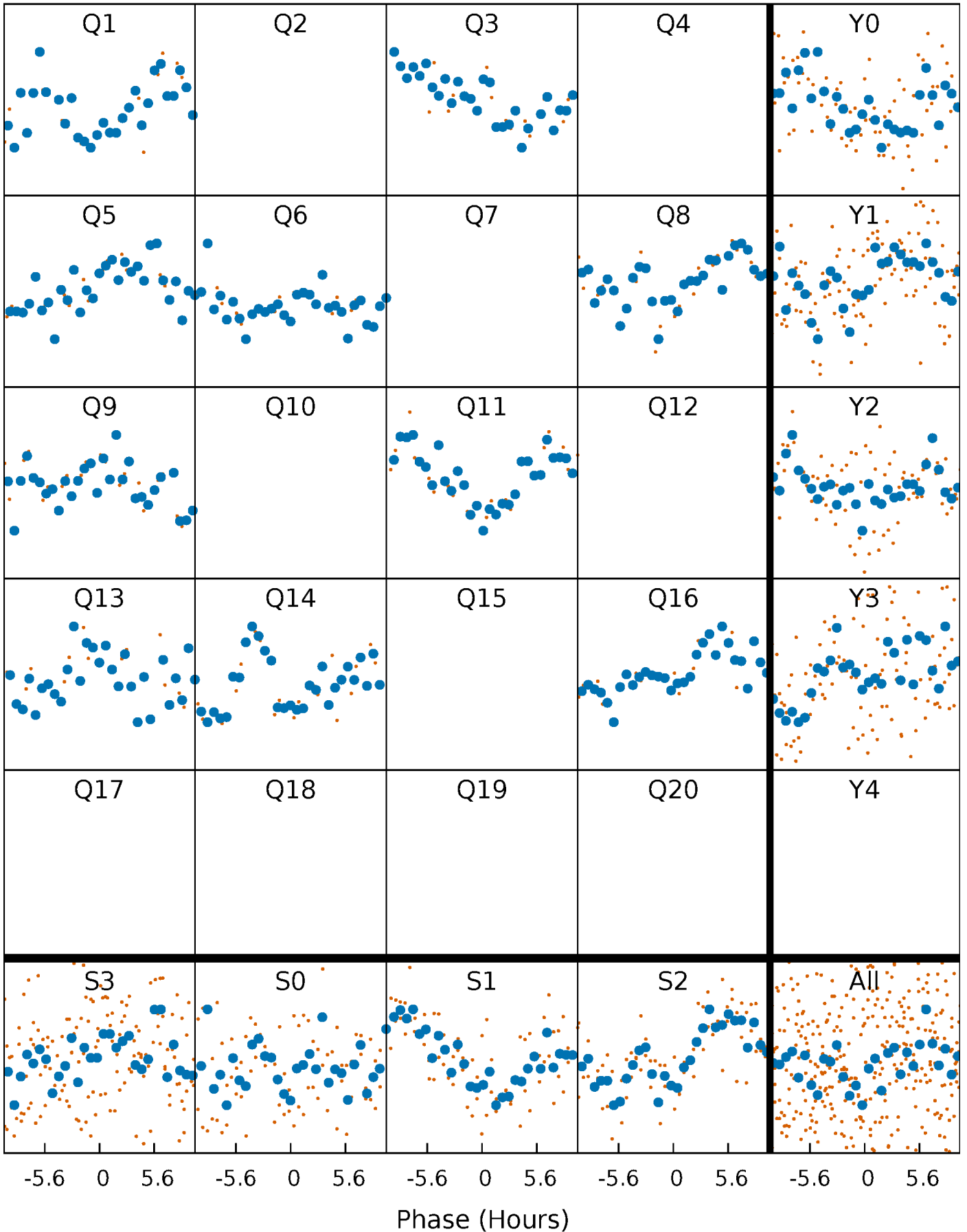


Non-Whitened Vs. Whitened Light Curve



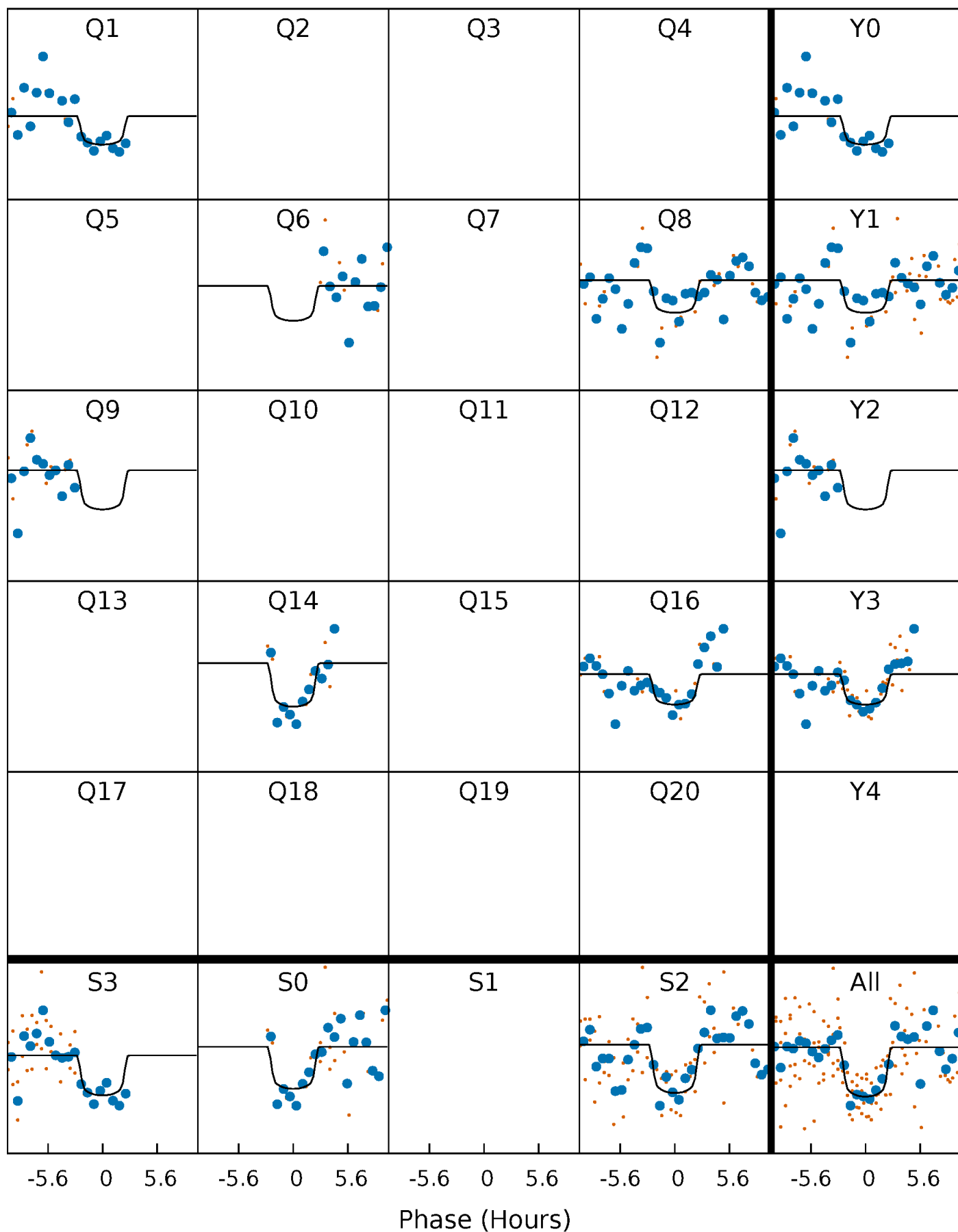
PDC Quarter-Phased Transit Curves

TCE 009284487-09 $P=151.090198$ Days $T_0=148.100294$ (BKJD)



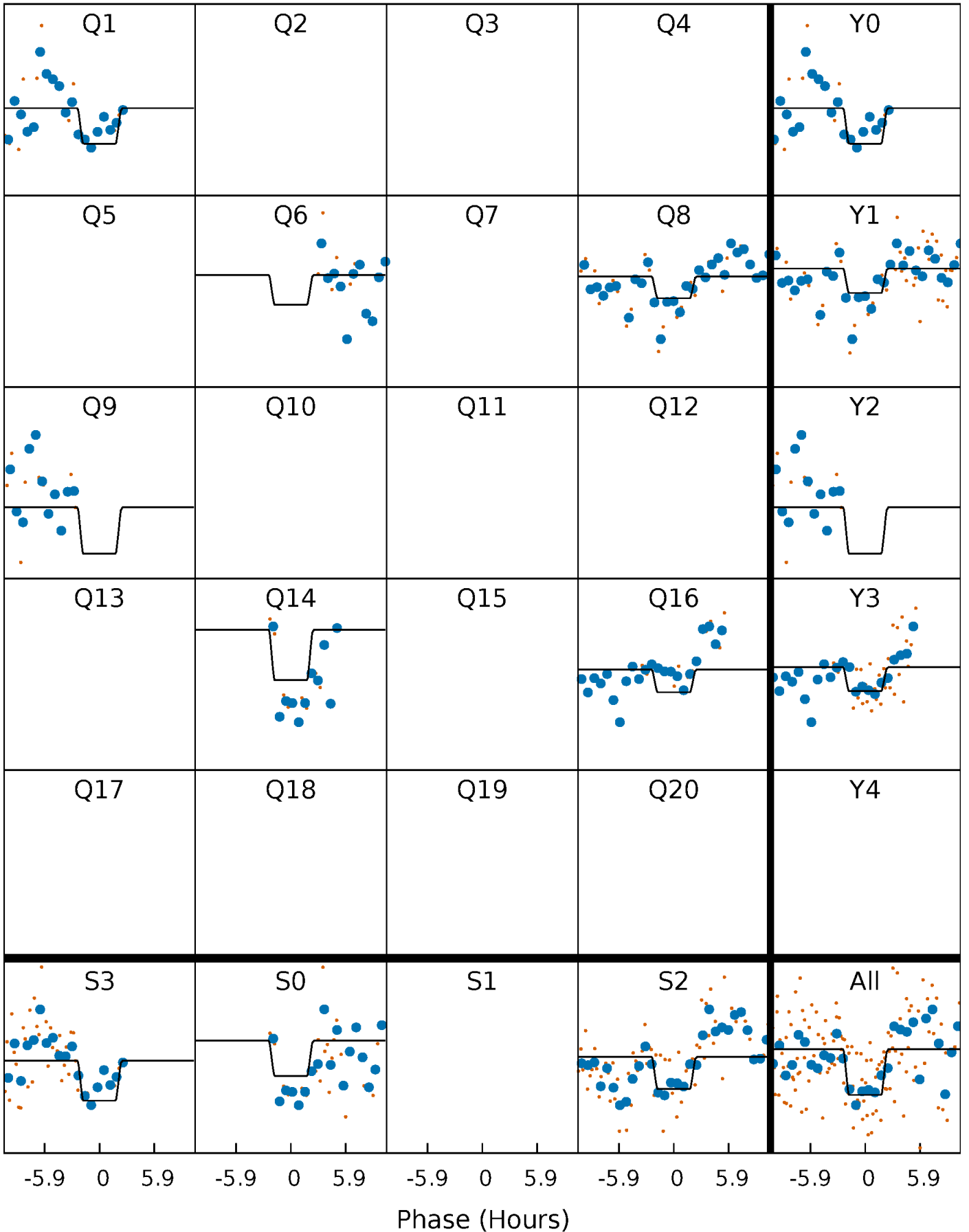
DV Quarter-Phased Transit Curves

TCE 009284487-09 $P=151.090198$ Days $T_0=148.100294$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

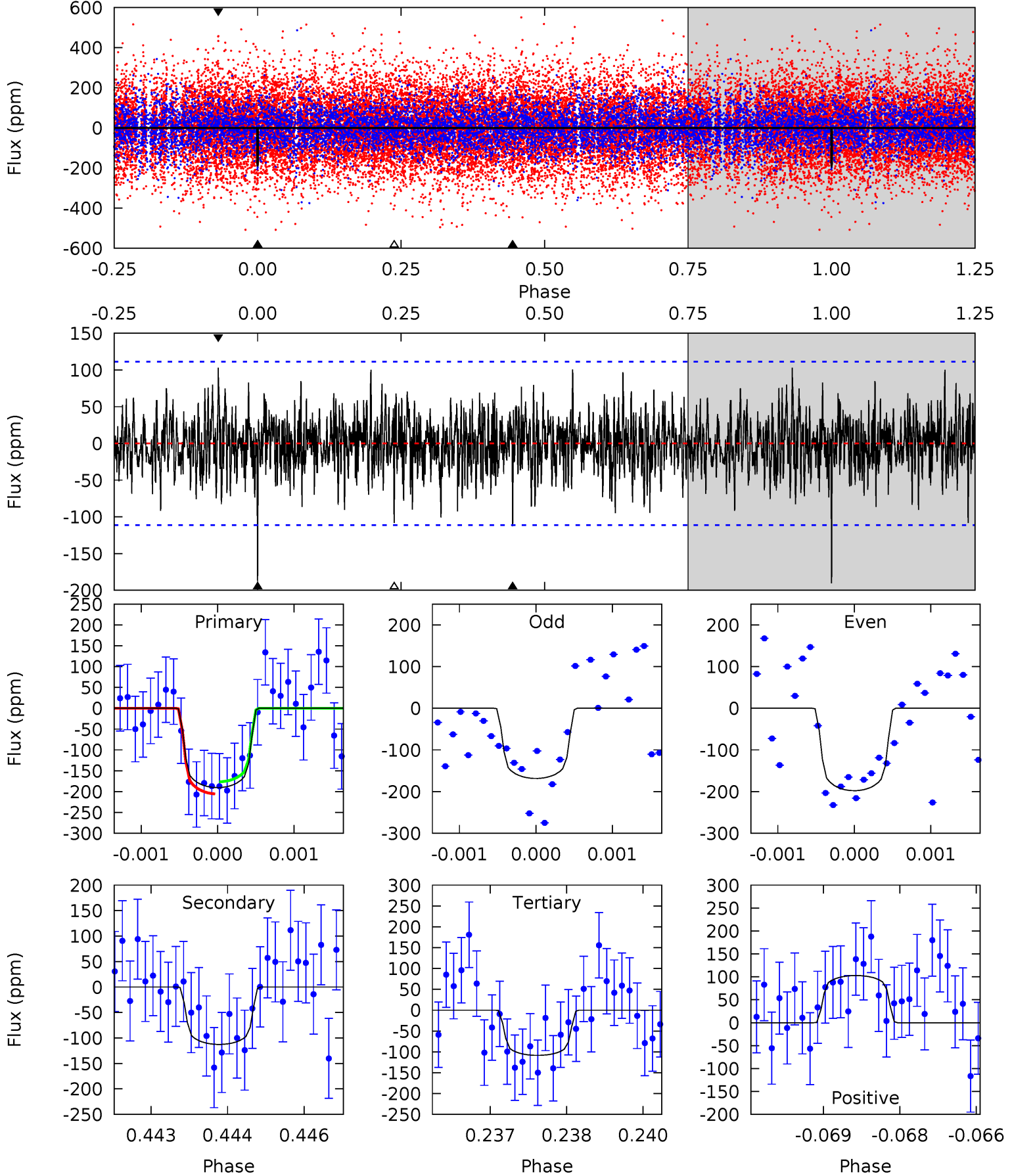
TCE 009284487-09 P=151.088403 Days $T_0=148.098881$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-09, P = 151.090198 Days, E = 148.100294 Days

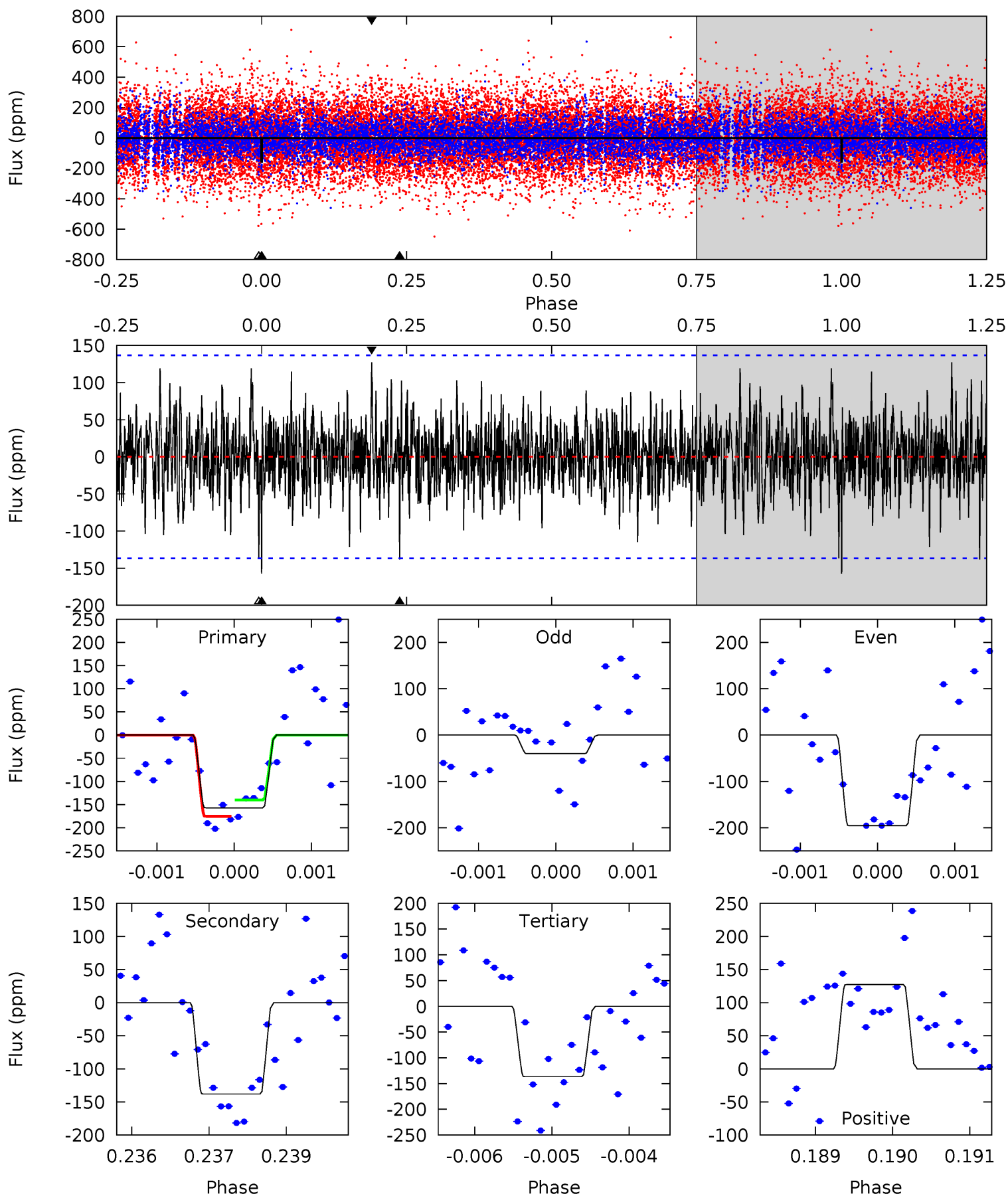
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.22	5.45	5.25	4.98	5.39	3.19	1.50	3.97	4.24	0.20	0.47	0.60	0.98	0.35	0.70



Alt Model-Shift Uniqueness Test

009284487-09, P = 151.088403 Days, E = 148.098881 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.22	5.46	5.40	5.04	5.41	3.23	1.40	0.82	1.18	0.06	0.42	2.67	0.94	0.45	0.70



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-113 ± 21	$2.38^{+0.97}_{-0.73}$	693^{+47}_{-40}	6078^{+1515}_{-858}	4148^{+5055}_{-2099}
Alt.	-138 ± 25	$2.19^{+0.84}_{-0.86}$	691^{+53}_{-38}	6738^{+2160}_{-944}	6059^{+9396}_{-2862}

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

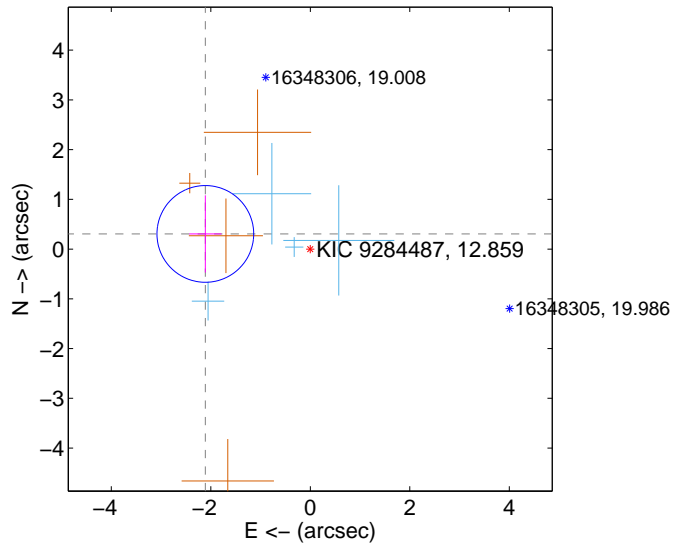
Supplemental centroid analysis for 009284487-09. Kepler magnitude: 12.86. Transit SNR 7.79

There are 4 quarters with good PRF difference image offsets

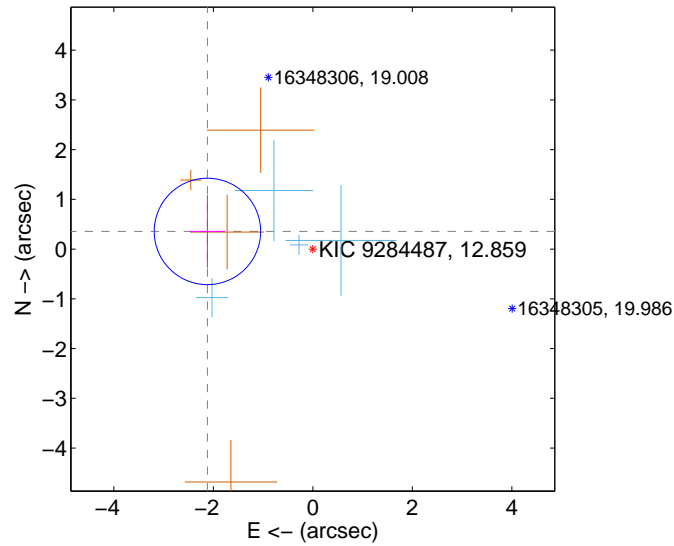
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.132 \pm 0.324	6.58	2.110 \pm 0.324	0.305 \pm 0.776
PRF-fit source offset from KIC position	2.149 \pm 0.357	6.03	2.119 \pm 0.349	0.355 \pm 0.731
photometric centroid source offset	1.30 \pm 0.92	1.42	-0.18 \pm 0.90	1.29 \pm 0.92

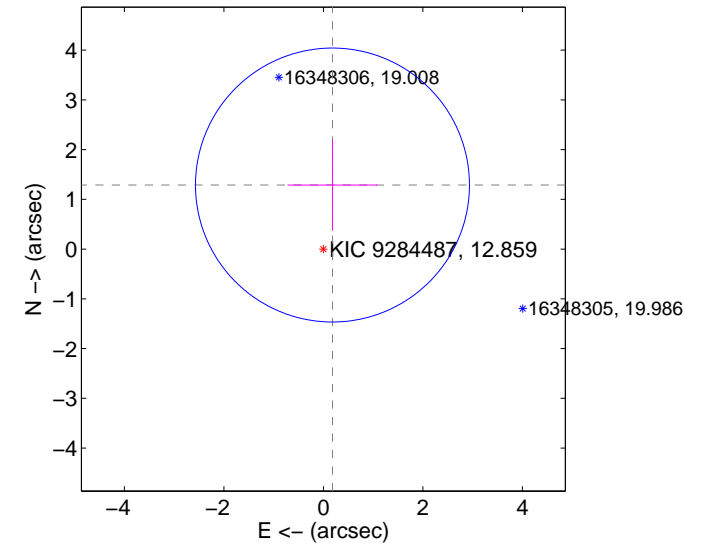
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

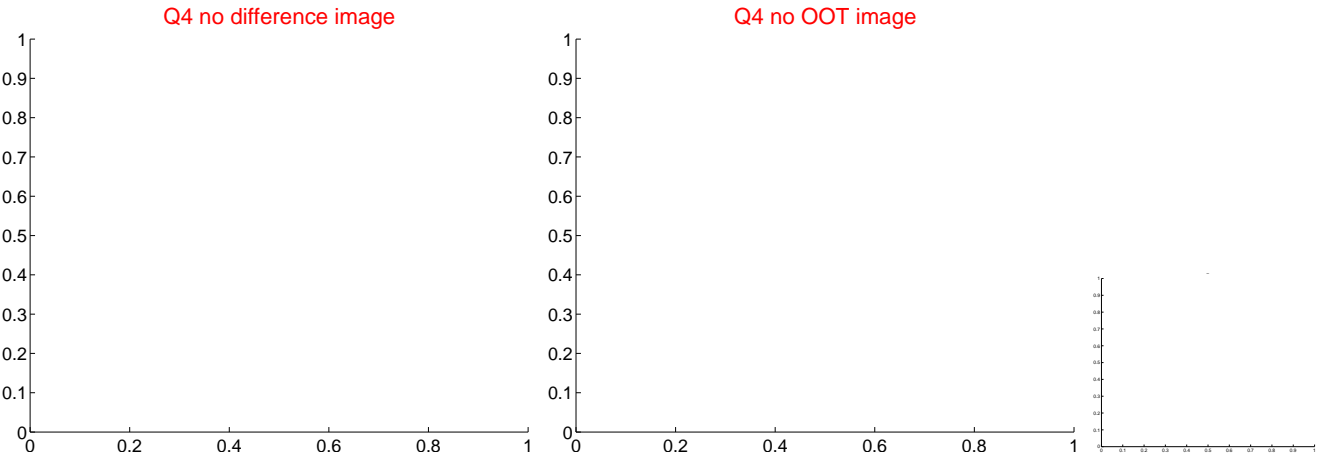
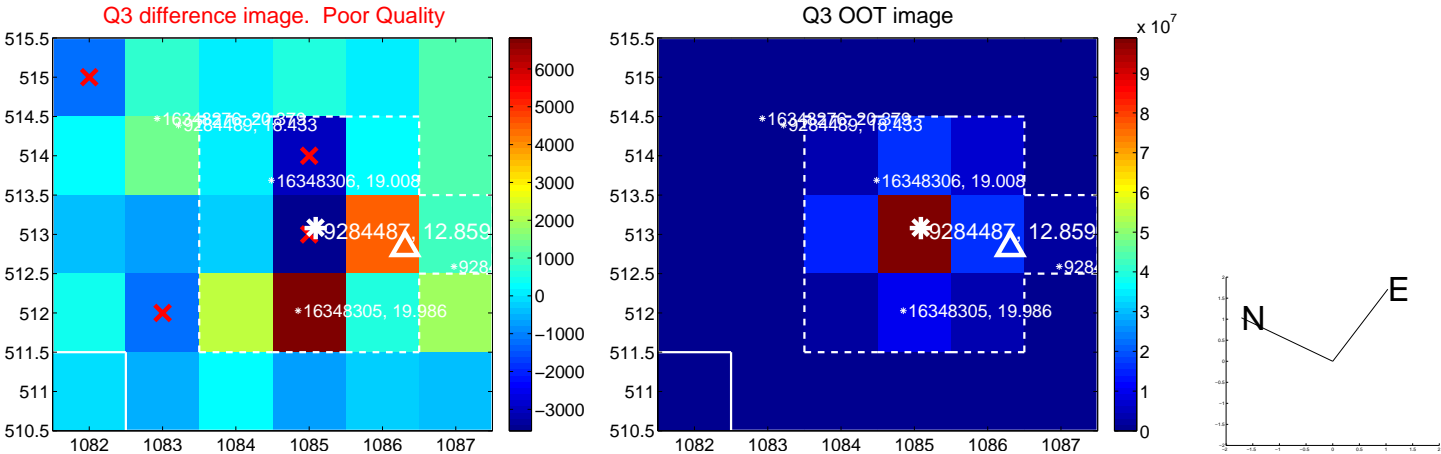
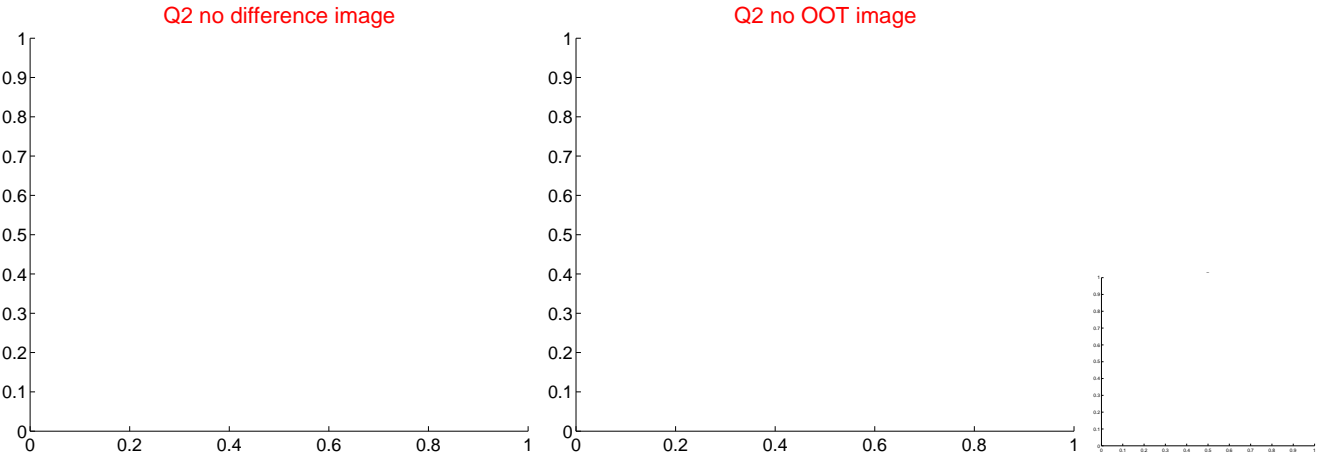
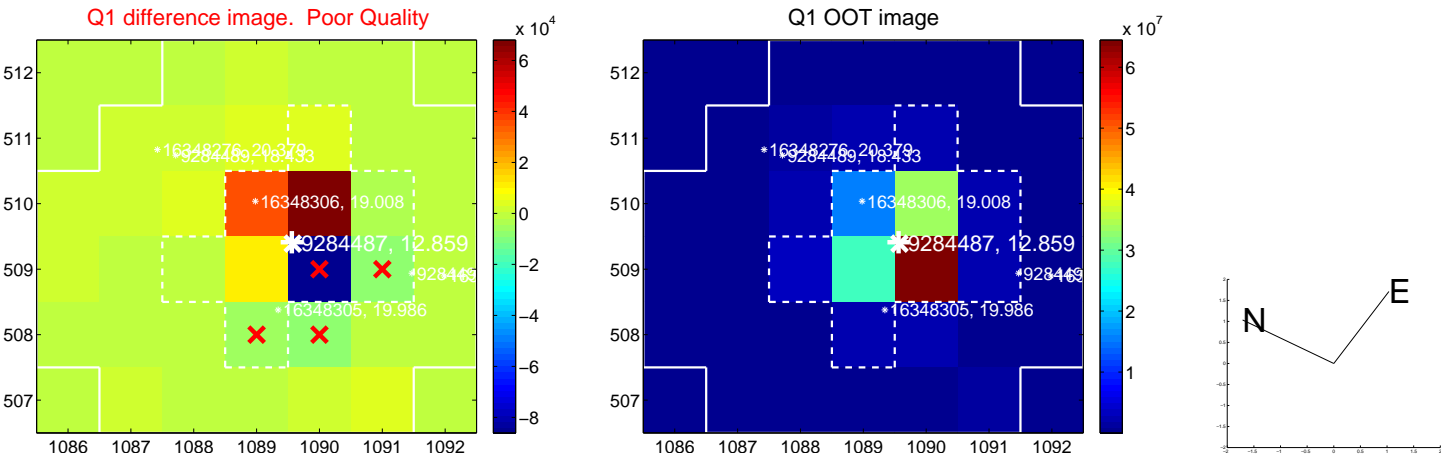


offset from photometric centroids

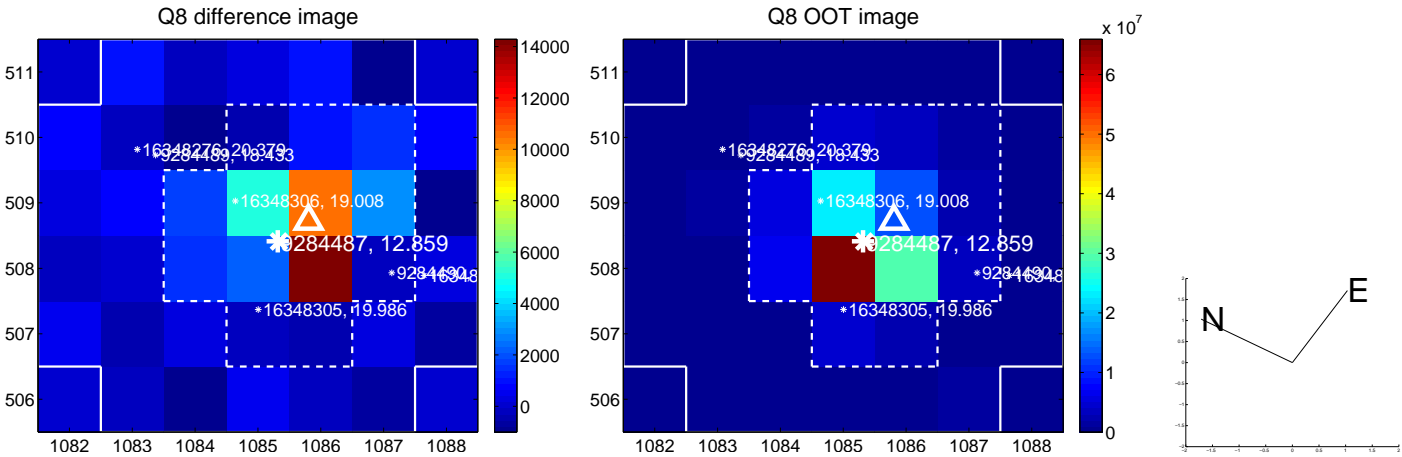
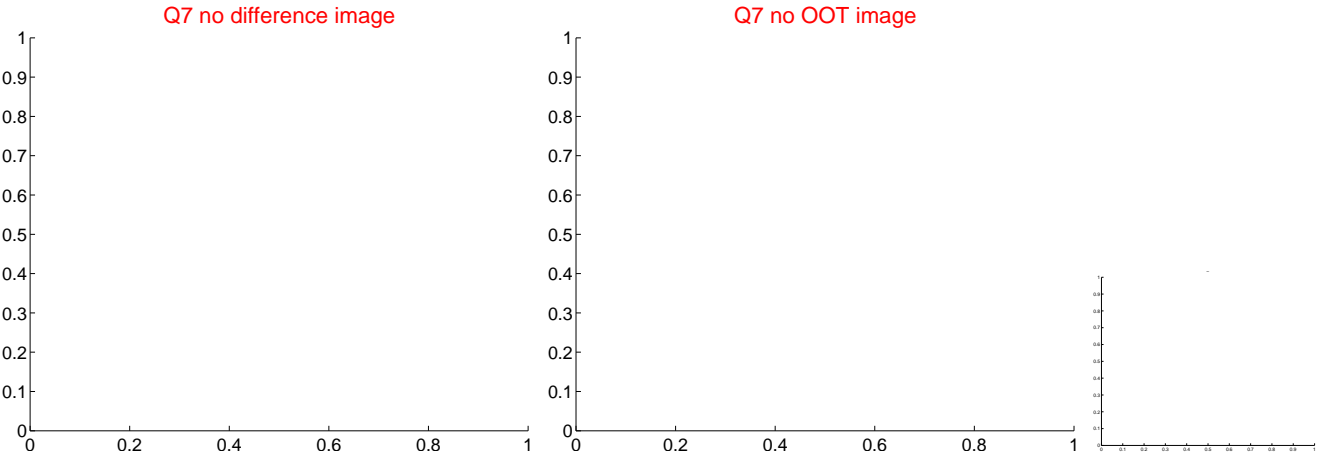
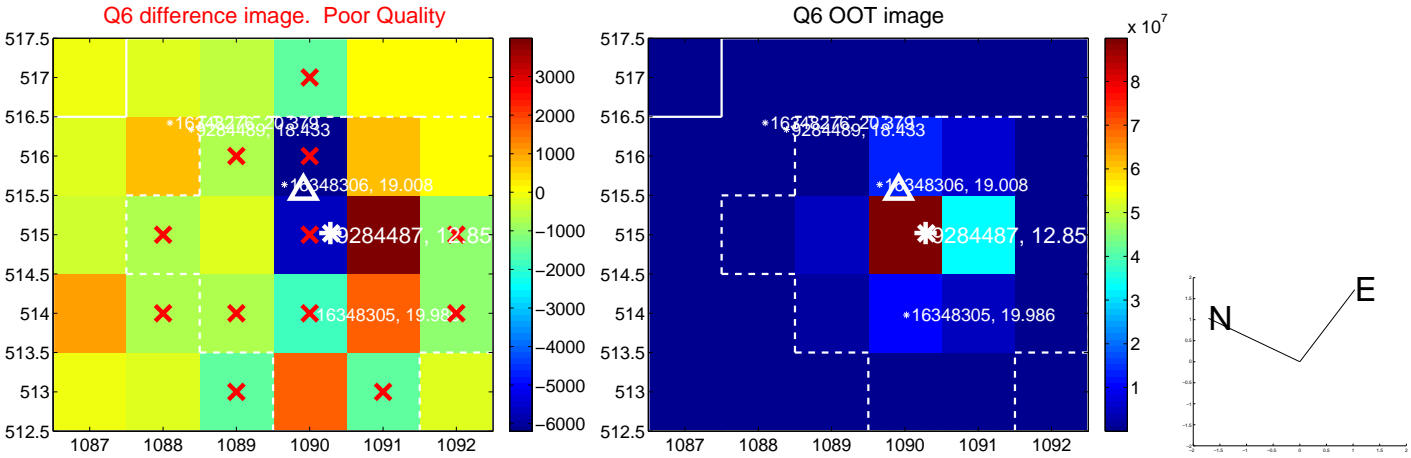
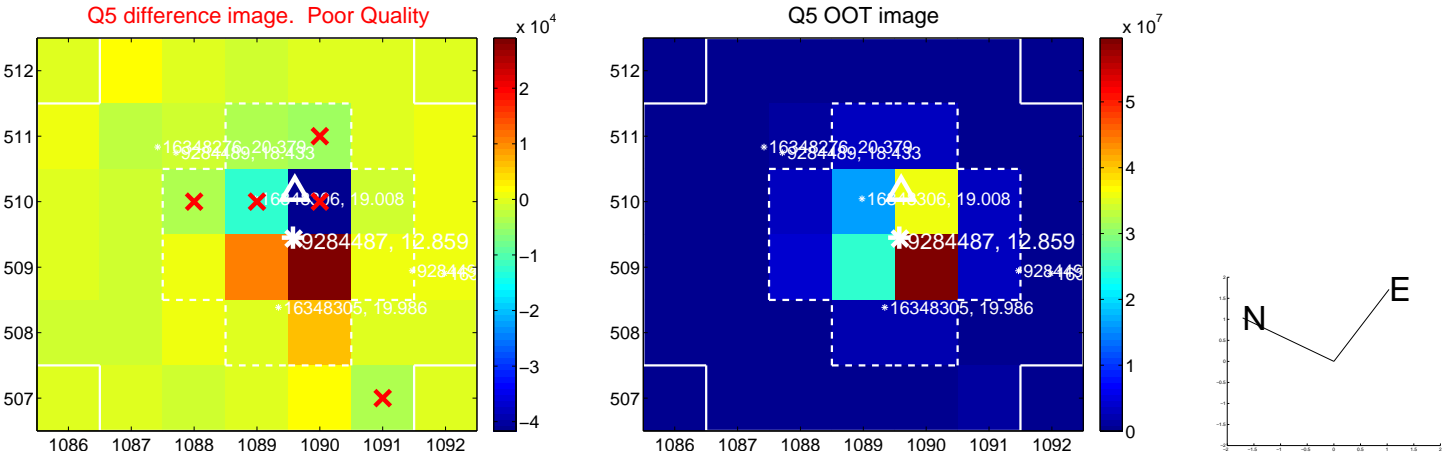


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

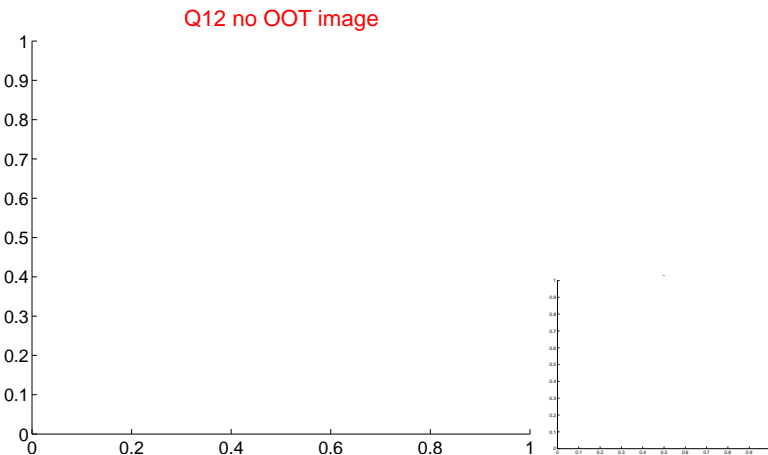
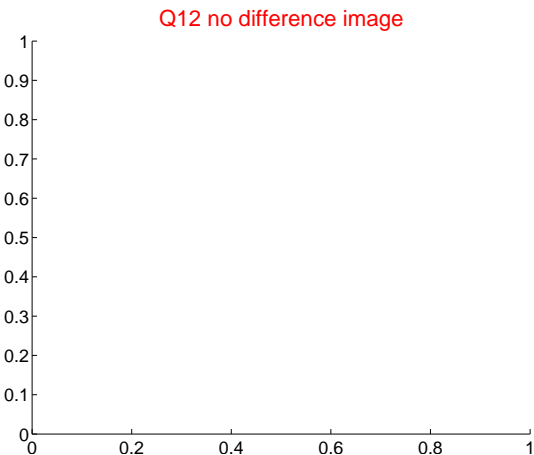
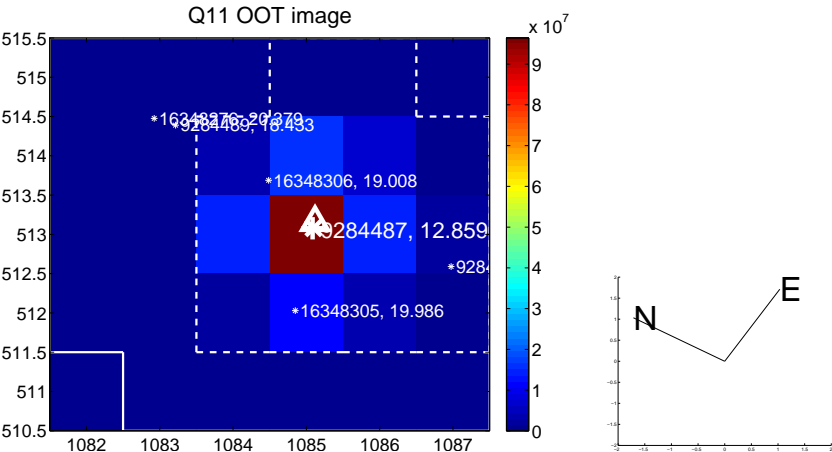
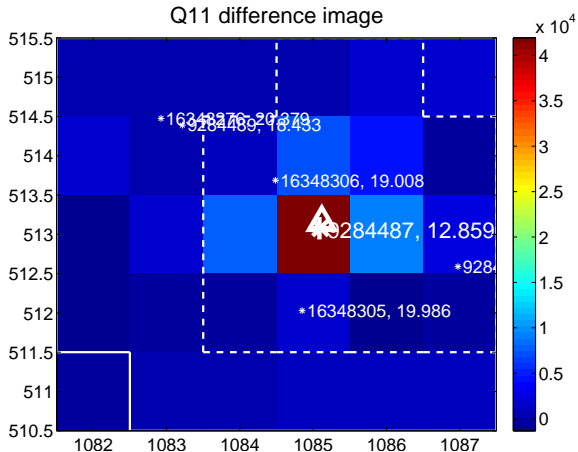
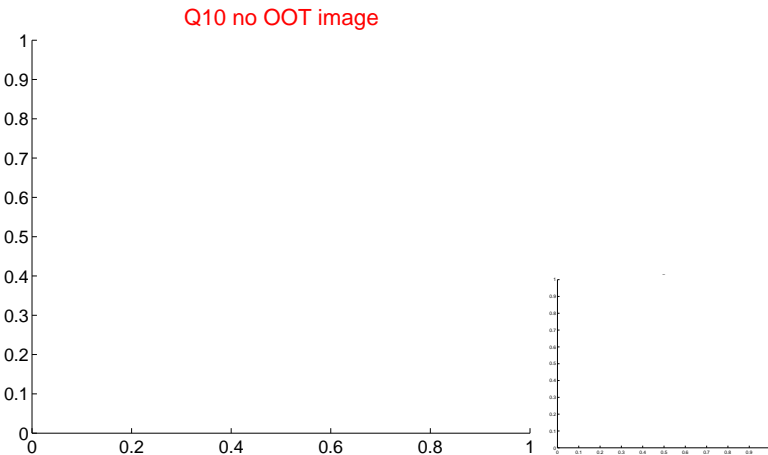
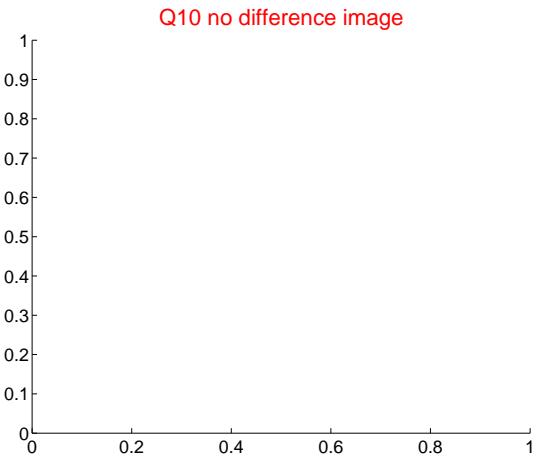
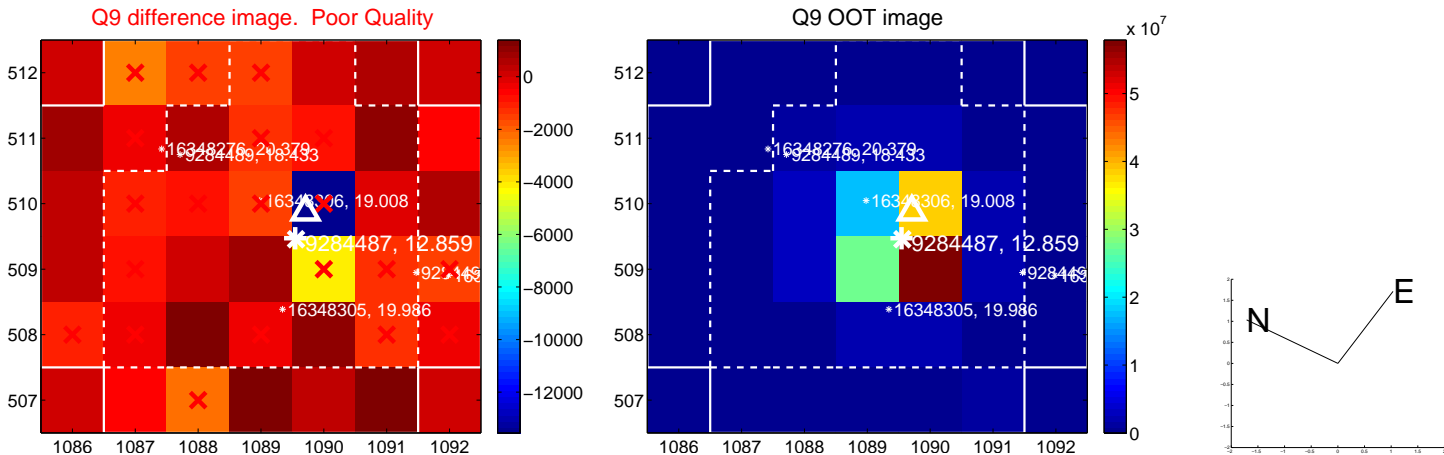
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



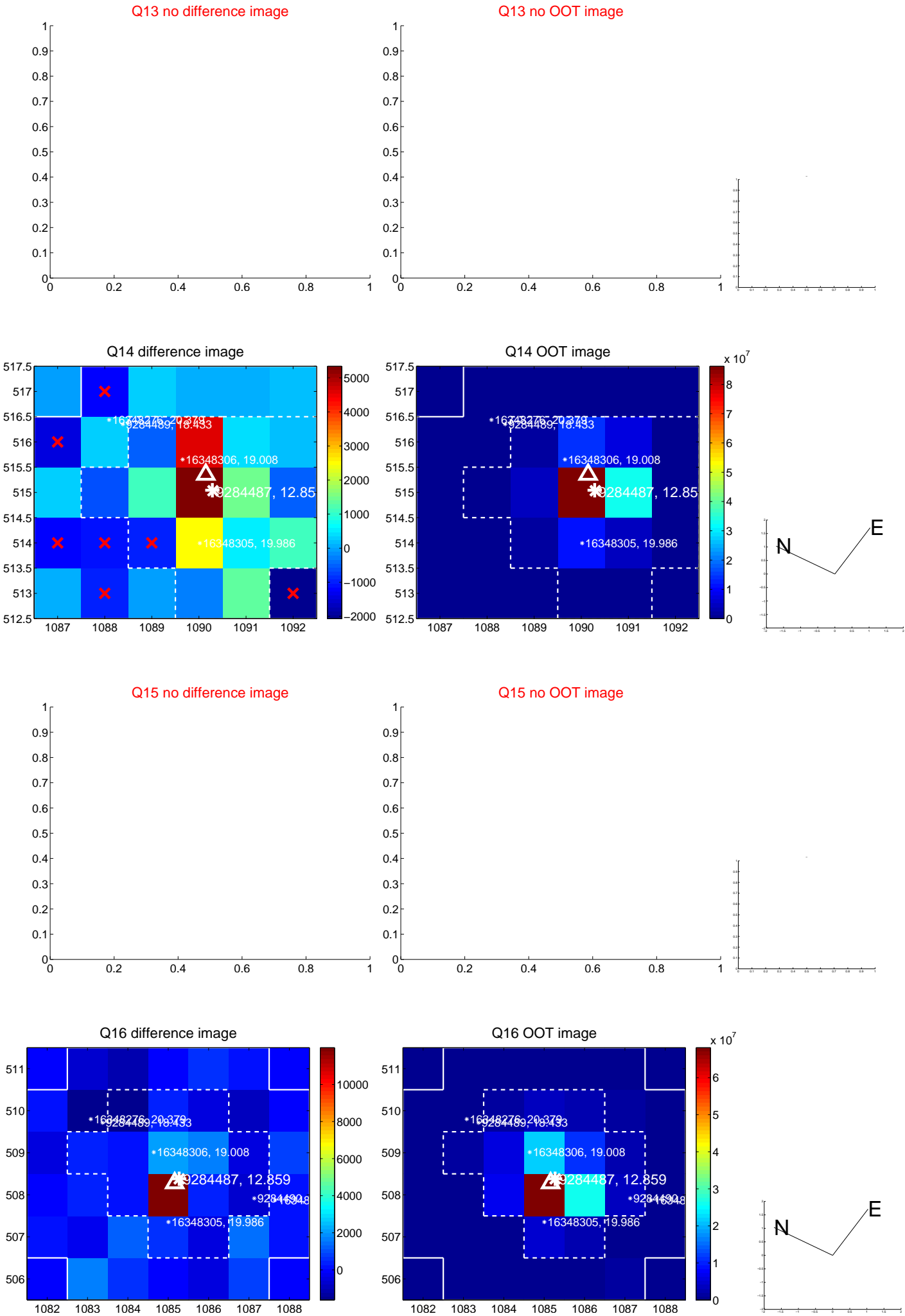
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



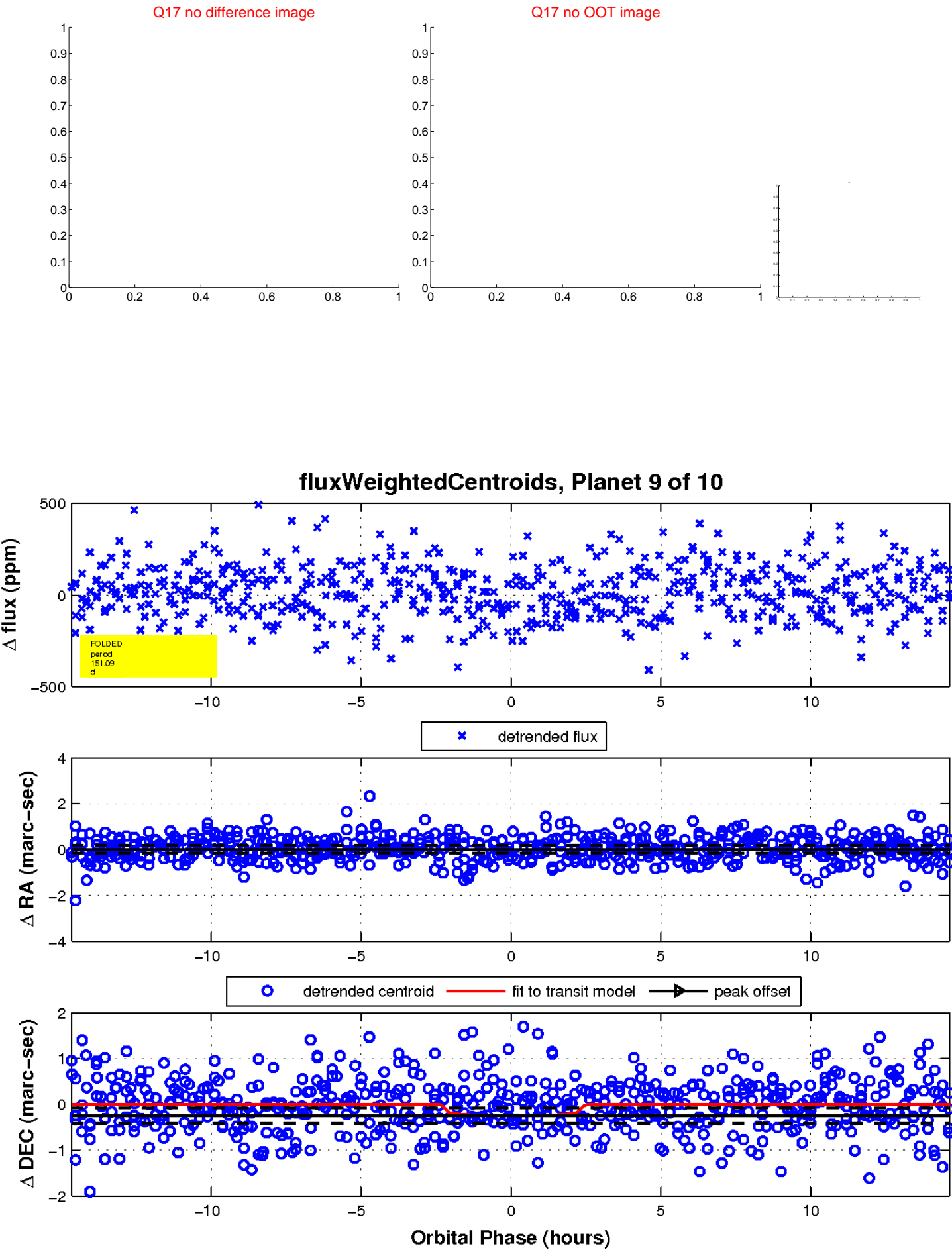
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

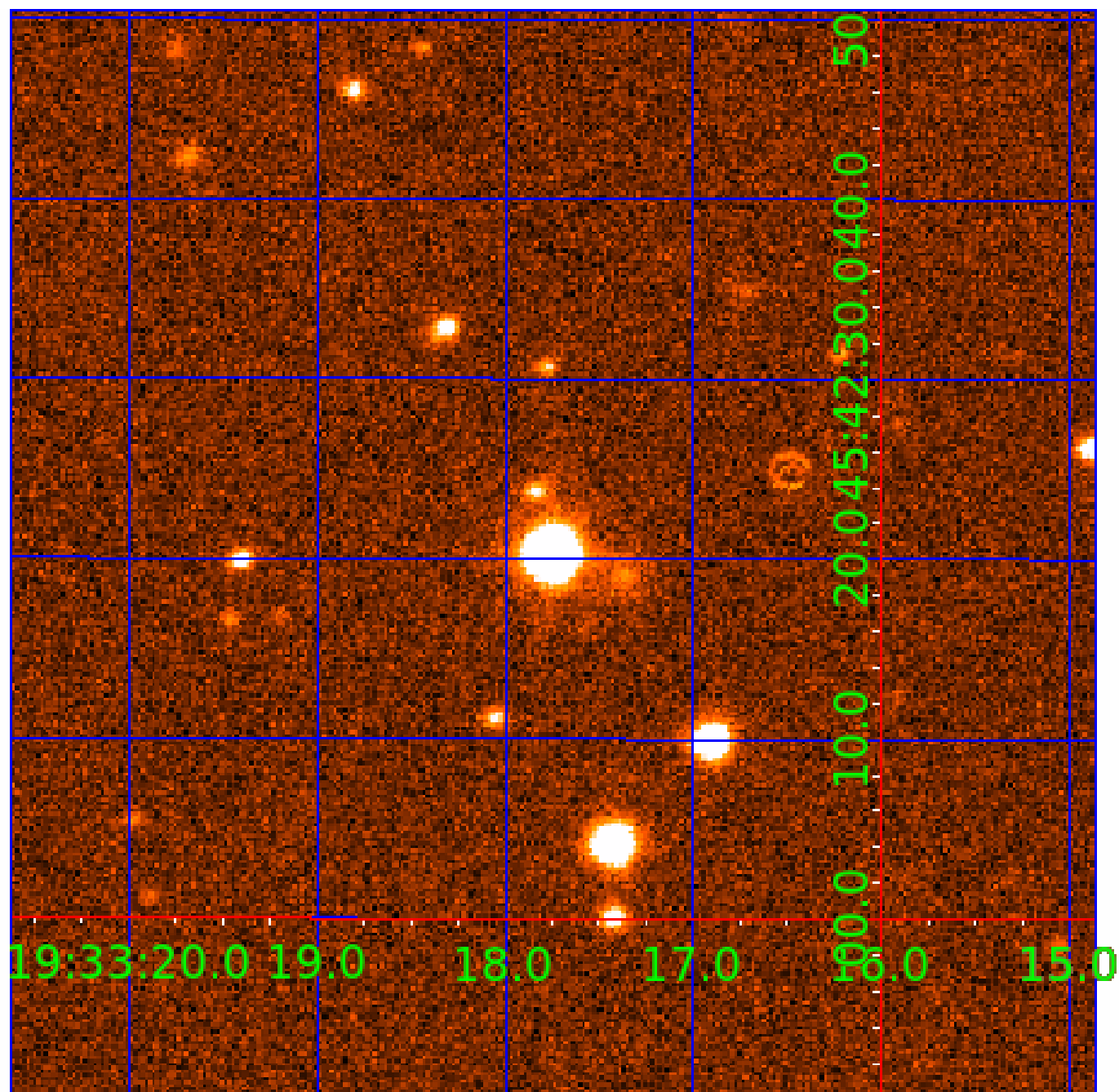


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009284487-01	OBS	No	2.595275	133.480054	7.2	13.243	7.9	3.7	1.48	7207	0.45	3046.79
009284487-02	OBS	No	189.645814	190.712818	111.5	22.200	12.9	7.1	1.48	7207	1.70	9.97
009284487-03	OBS	No	253.790281	158.567538	232.9	10.077	9.2	9.2	1.48	7207	2.73	6.76
009284487-04	OBS	No	137.012410	199.730293	219.9	3.196	7.8	8.3	1.48	7207	2.48	15.38
009284487-05	OBS	No	171.109107	235.890138	173.7	10.647	7.7	7.5	1.48	7207	2.18	11.44
009284487-06	OBS	No	147.604406	134.781297	205.3	2.666	7.6	7.2	1.48	7207	2.50	13.93
009284487-07	OBS	No	138.040844	253.021107	170.1	5.300	7.4	8.2	1.48	7207	2.18	15.23
009284487-08	OBS	No	140.562117	193.028584	203.7	5.995	7.6	7.4	1.48	7207	2.45	14.87
009284487-09	OBS	No	151.090198	148.100294	187.5	4.895	7.6	7.8	1.48	7207	2.33	13.50
009284487-10	OBS	No	24.617635	153.902384	100.1	3.063	7.6	7.5	1.48	7207	1.71	151.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009284487-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009284487-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009284487-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009284487-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
009284487-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
009284487-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009284487-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009284487-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS

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

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

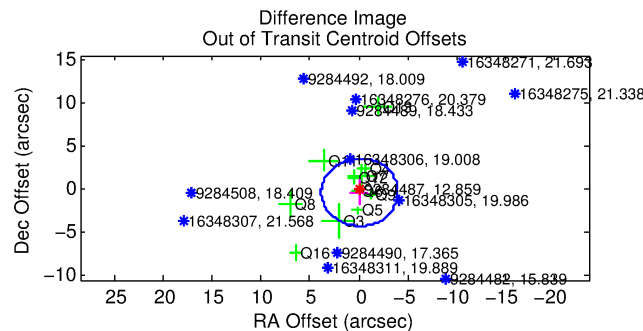
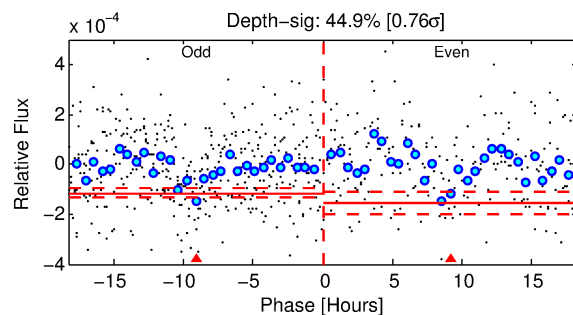
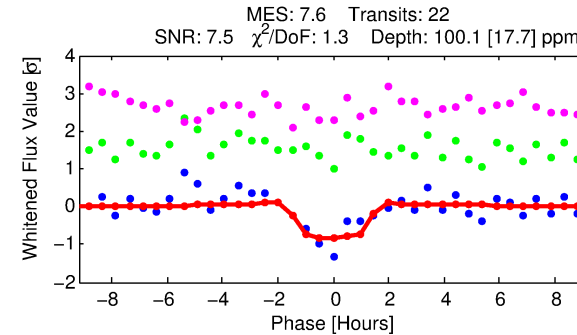
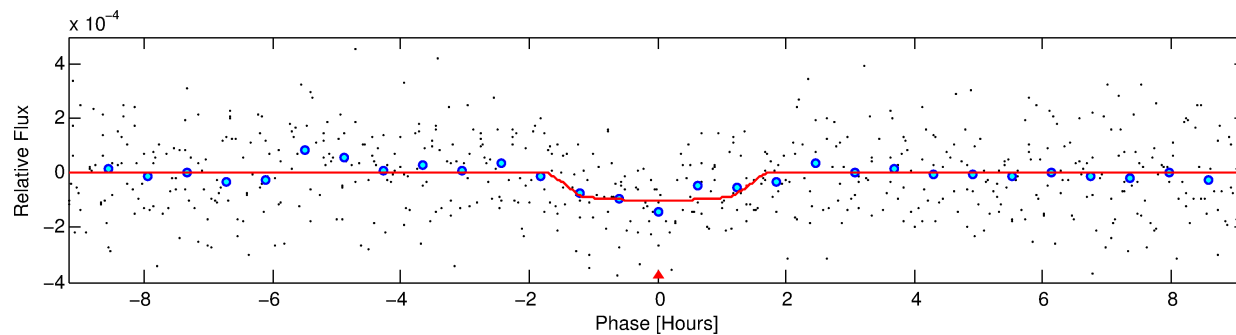
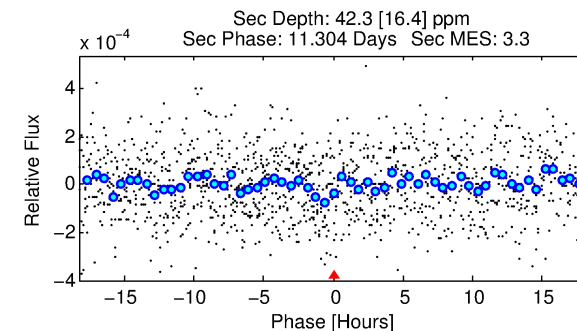
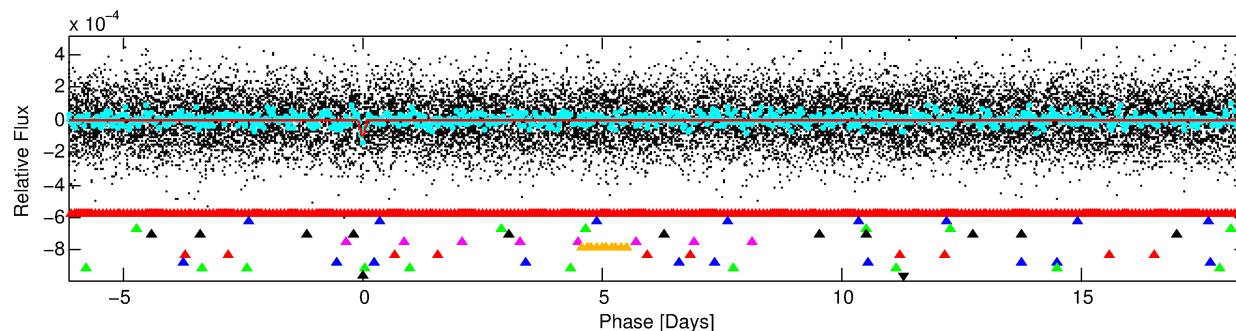
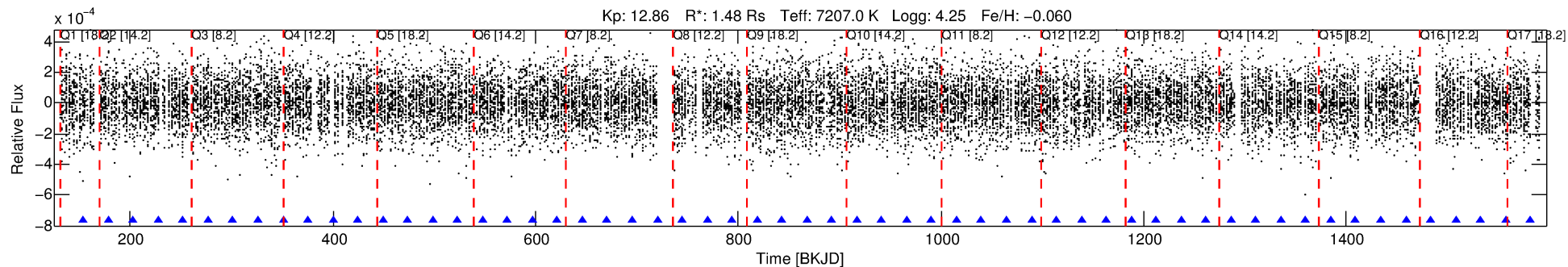
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009284487-10

No Significant Match Found

DV One-Page Summary

KIC: 9284487 Candidate: 10 of 10 Period: 24.618 d



DV Fit Results:

Period = 24.61764 [0.00038] d
Epoch = 153.9024 [0.0128] BKJD
Rp/R* = 0.0106 [0.0084]
a/R* = 29.51 [146.46]
b = 0.89 [1.18]
Seff = 151.74 [63.33]
Teq = 895 [93] K
Rp = 1.70 [1.48] Re
a = 0.1868 [0.0522] AU
Ag = 279.16 [469.59] [0.59σ]
Teffp = 5656 [2324] K [2.05σ]

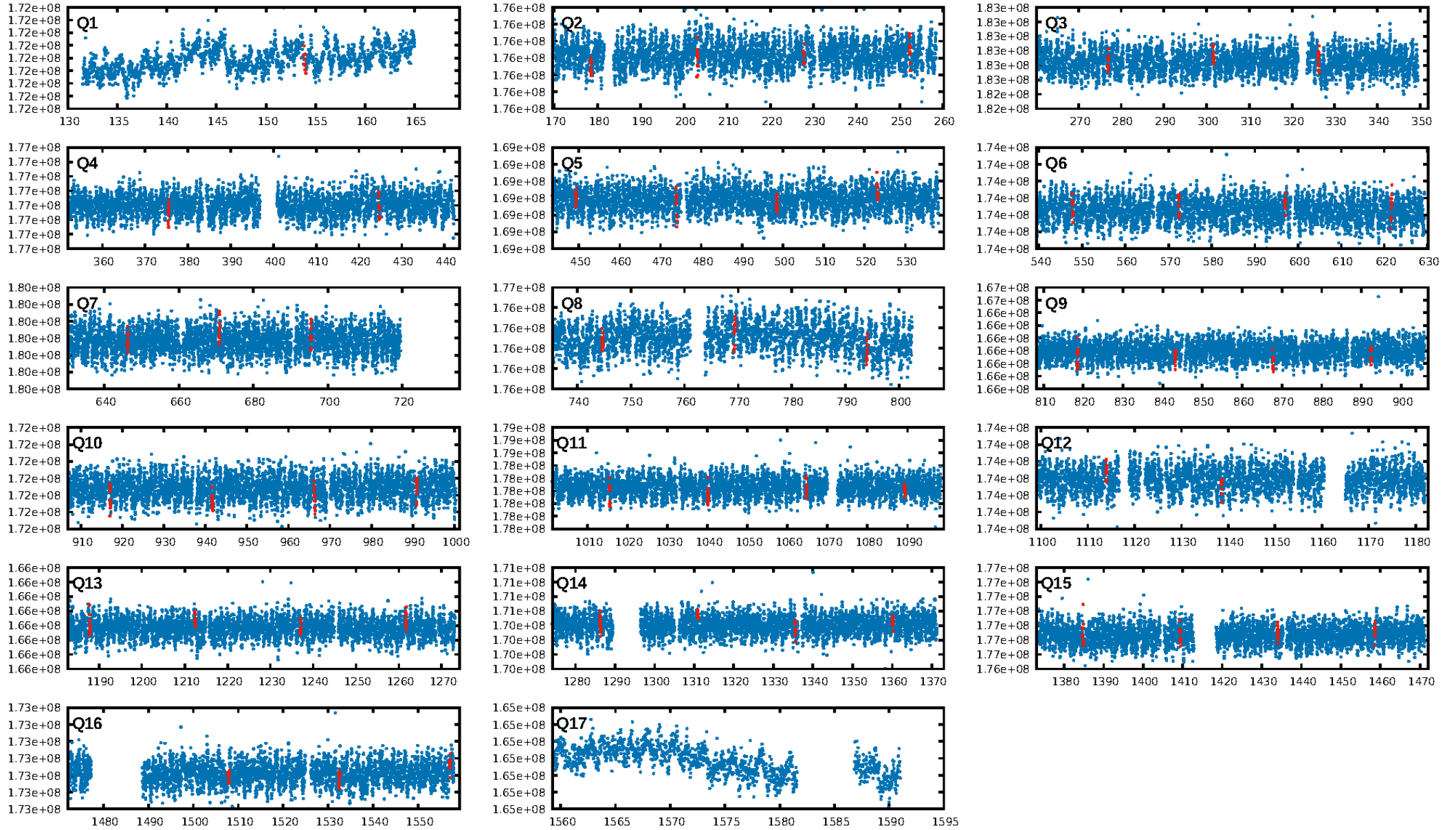
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.8σ]
LongPeriod-sig: 100.0% [609.39σ]
ModelChiSquare2-sig: 27.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.10e-08
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: -1.388
Centroid-sig: 13.2%
Centroid-so: 1.172 arcsec [1.34σ]
OotOffset-rm: 0.356 arcsec [0.27σ]
OotOffset-st: 1/3/4/3 [11]
KicOffset-rm: 0.308 arcsec [0.28σ]
KicOffset-st: 1/3/4/3 [11]
DiffImageQuality-fgm: 0.36 [4/11]
DiffImageOverlap-fno: 0.88 [14/16]

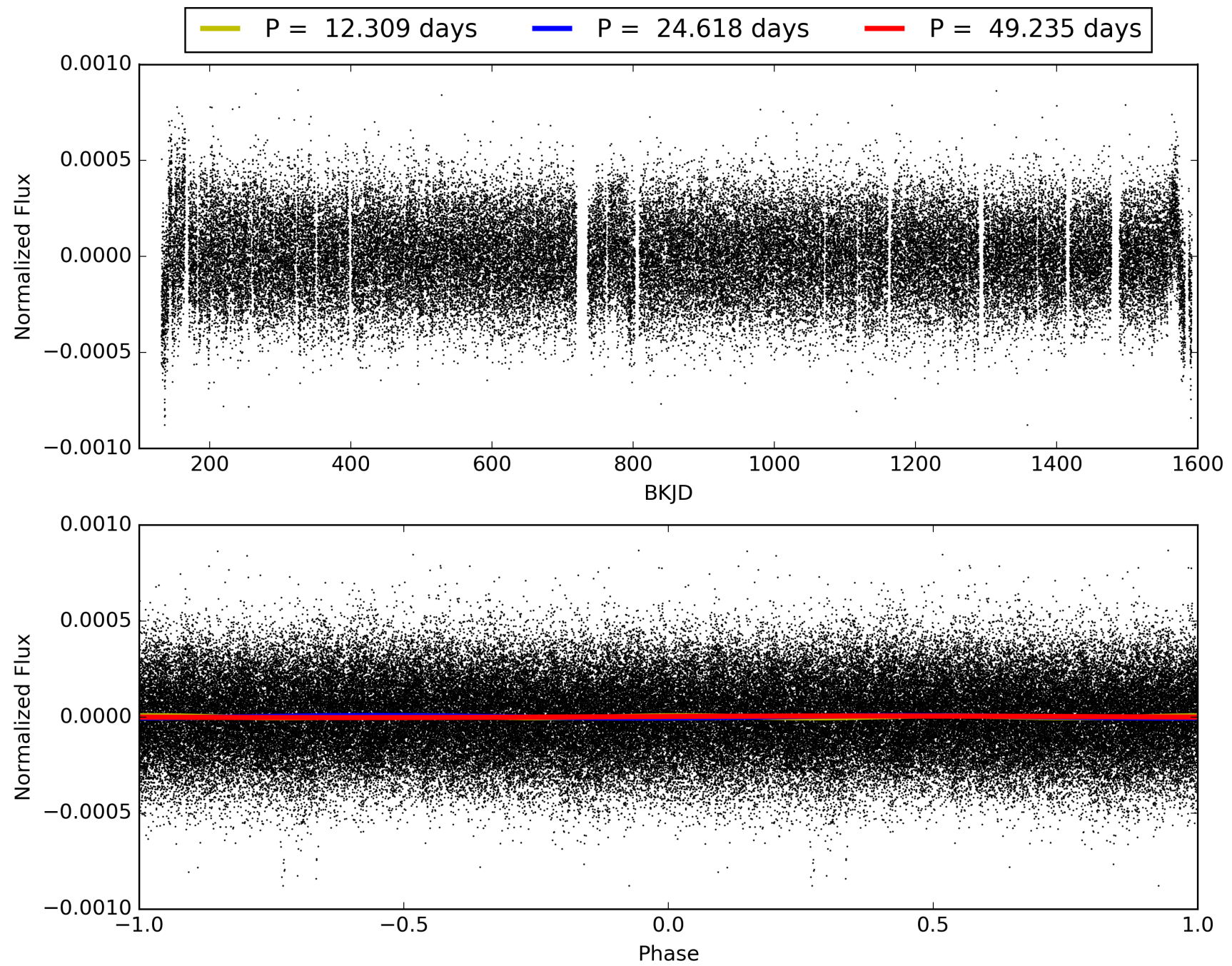
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:40:32 Z

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

TCE 009284487-10, PDC Light Curves

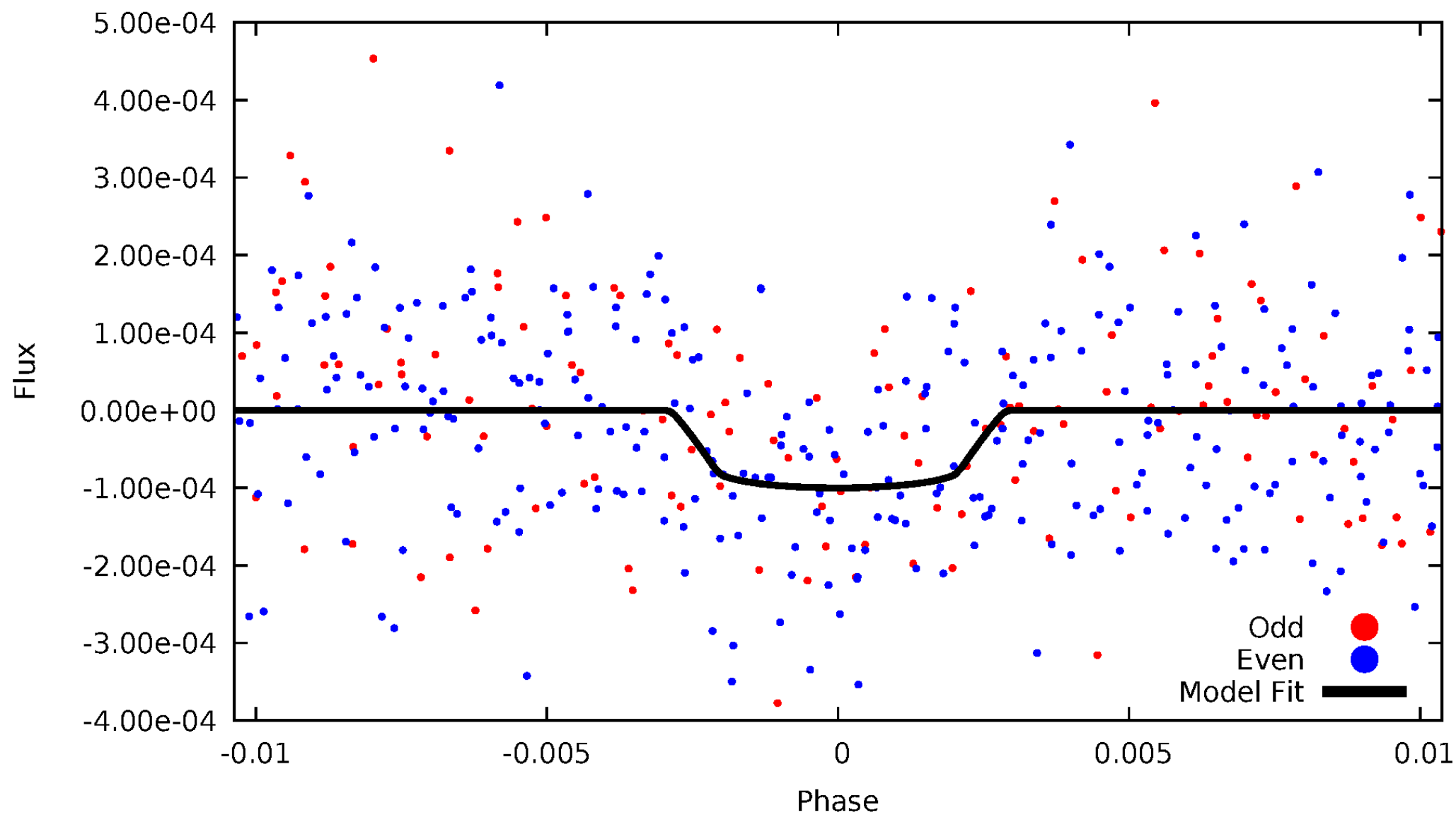


TCE 009284487-10



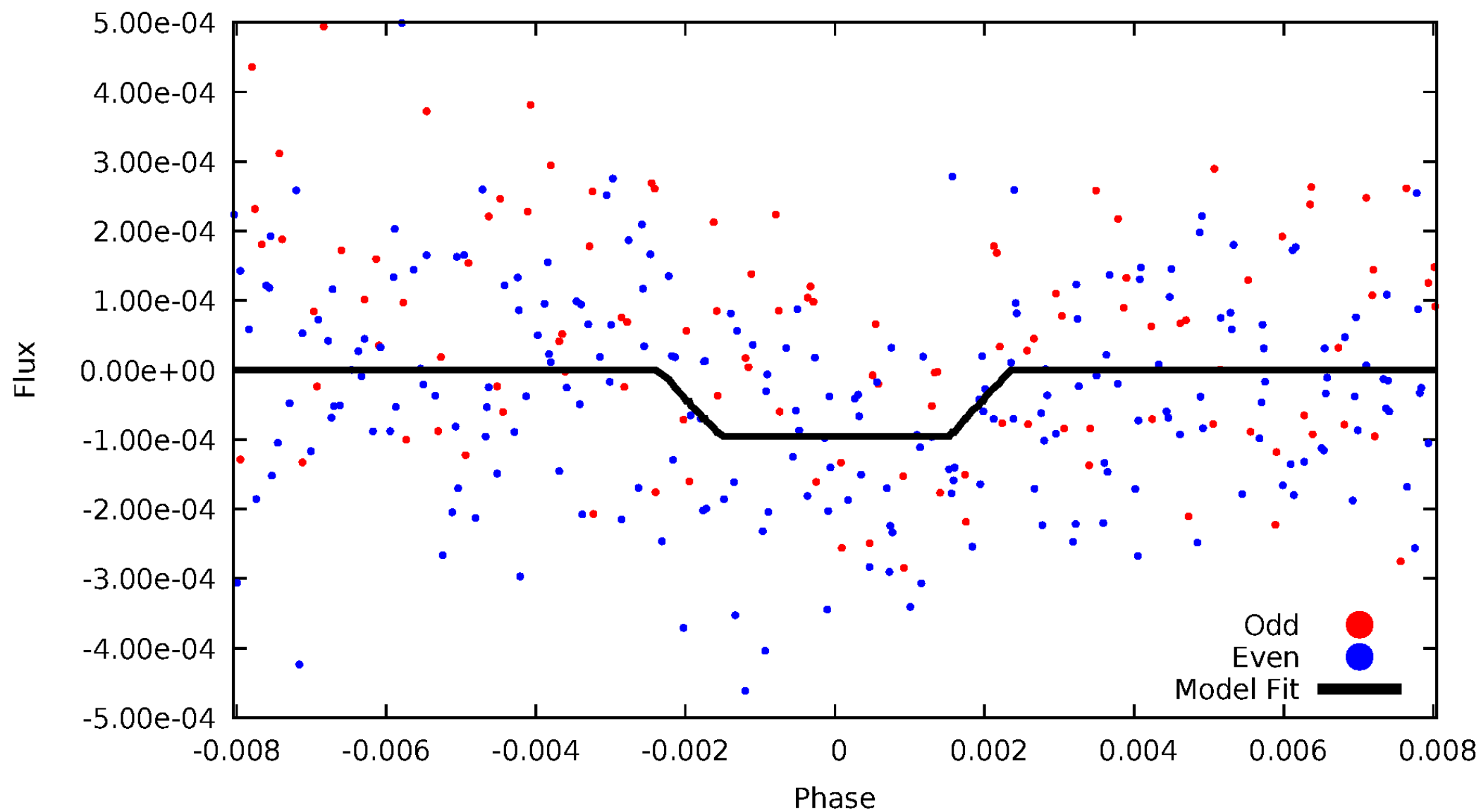
DV Odd/Even

TCE 009284487-10



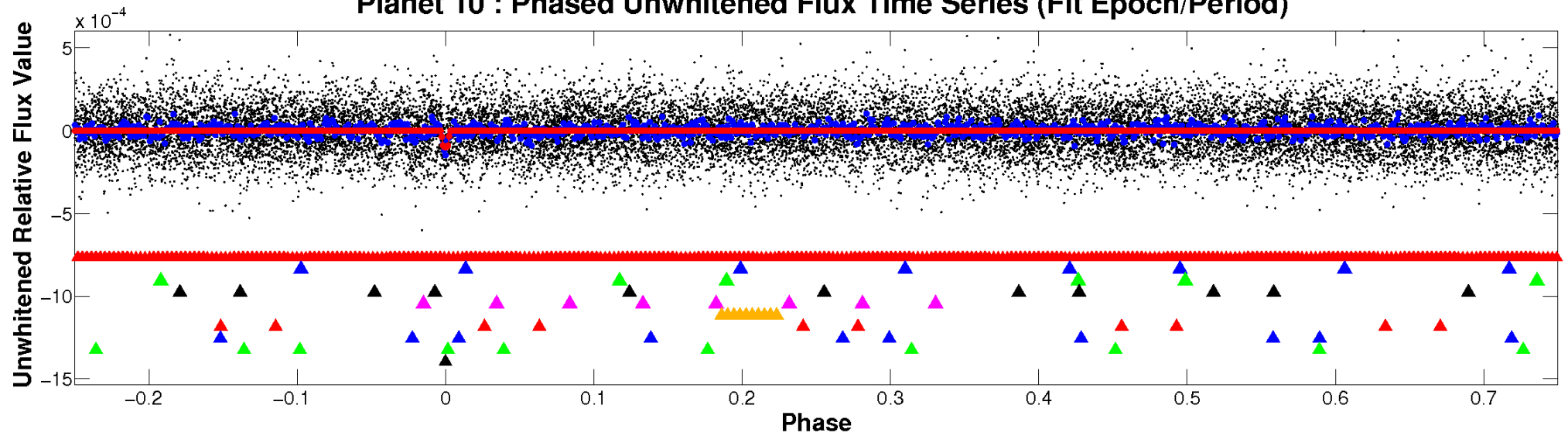
ALT Odd/Even

TCE 009284487-10

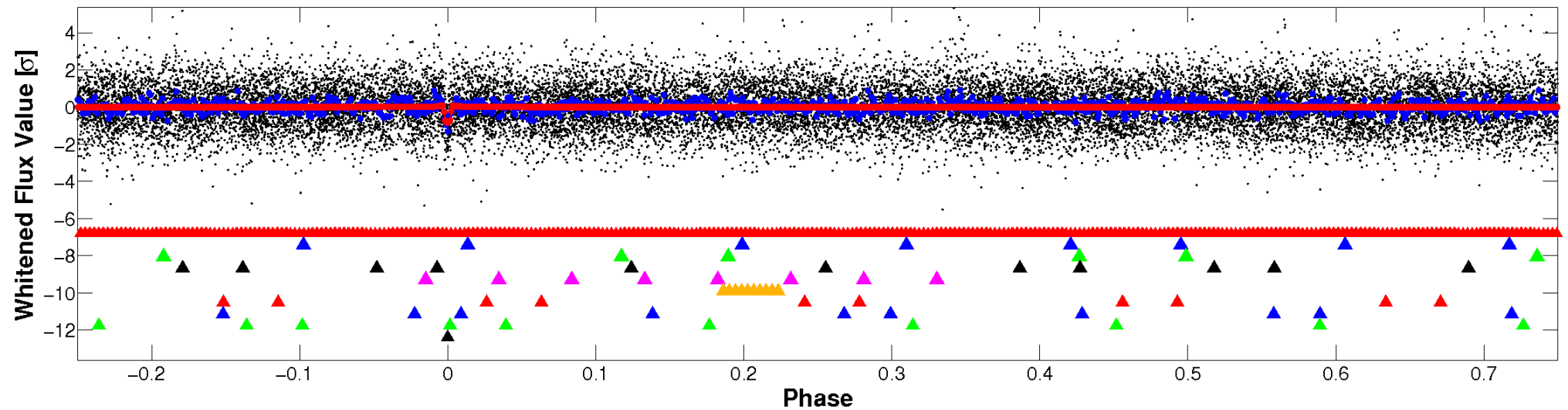


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

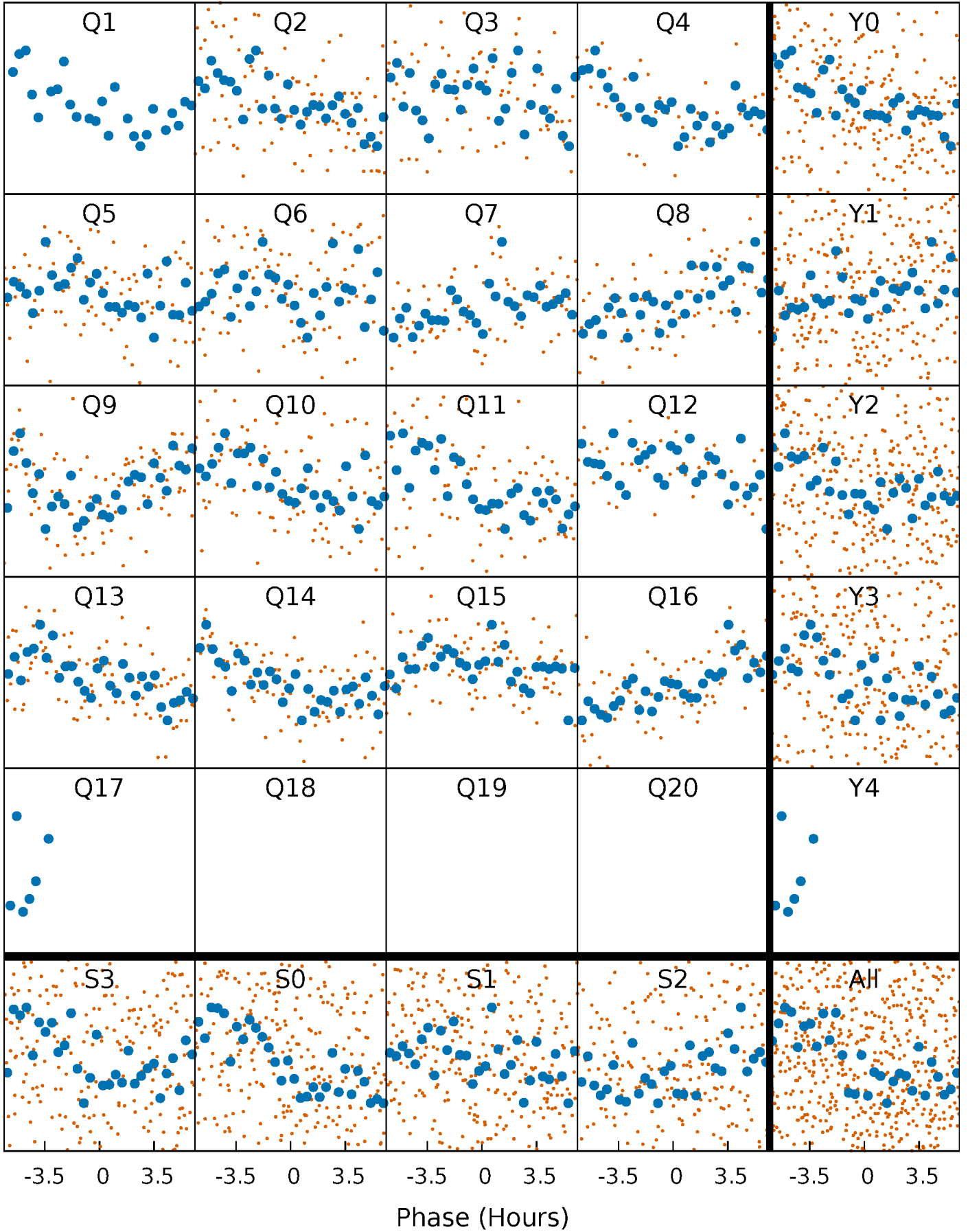


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



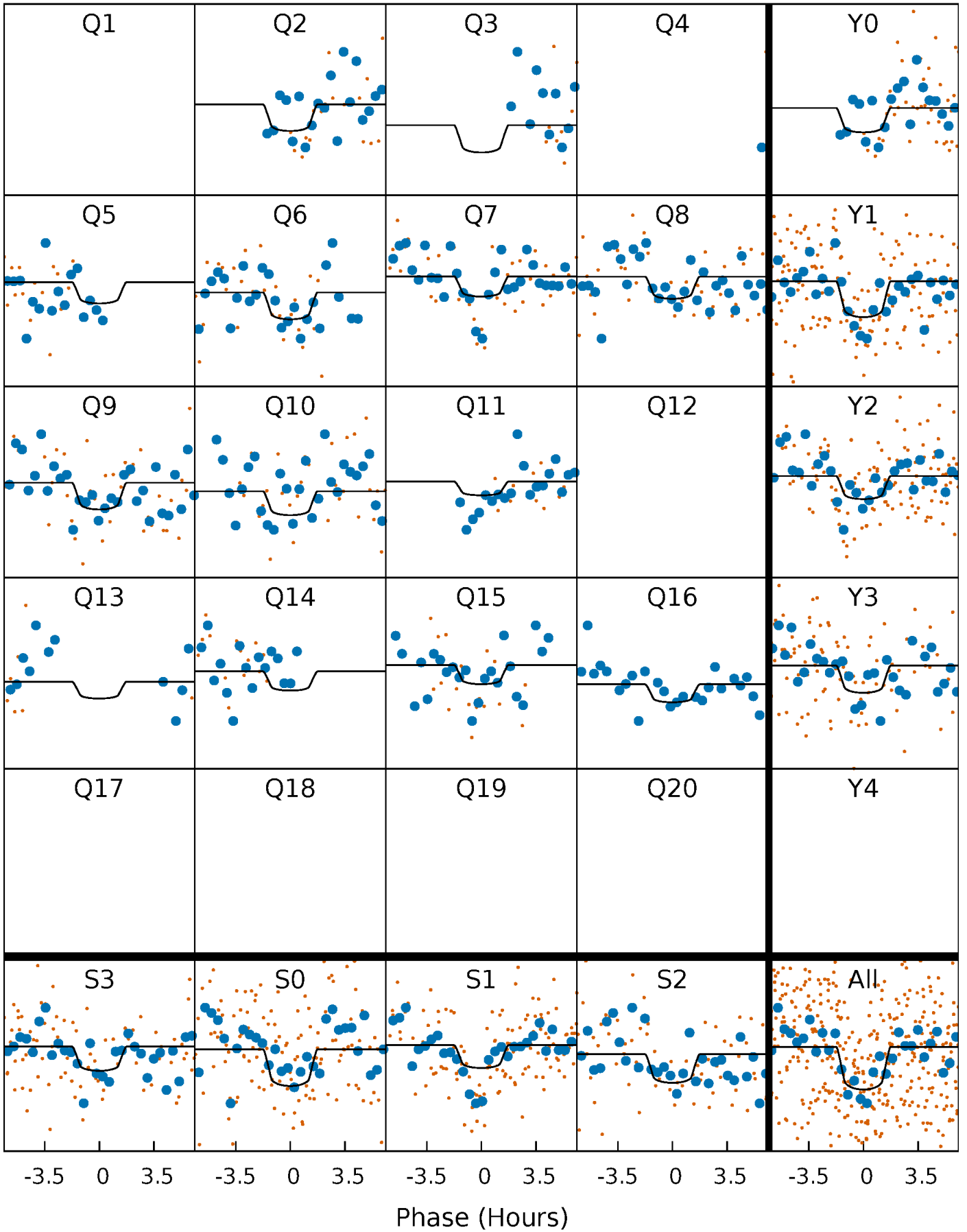
PDC Quarter-Phased Transit Curves

TCE 009284487-10 P= 24.617635 Days $T_0=153.902384$ (BKJD)



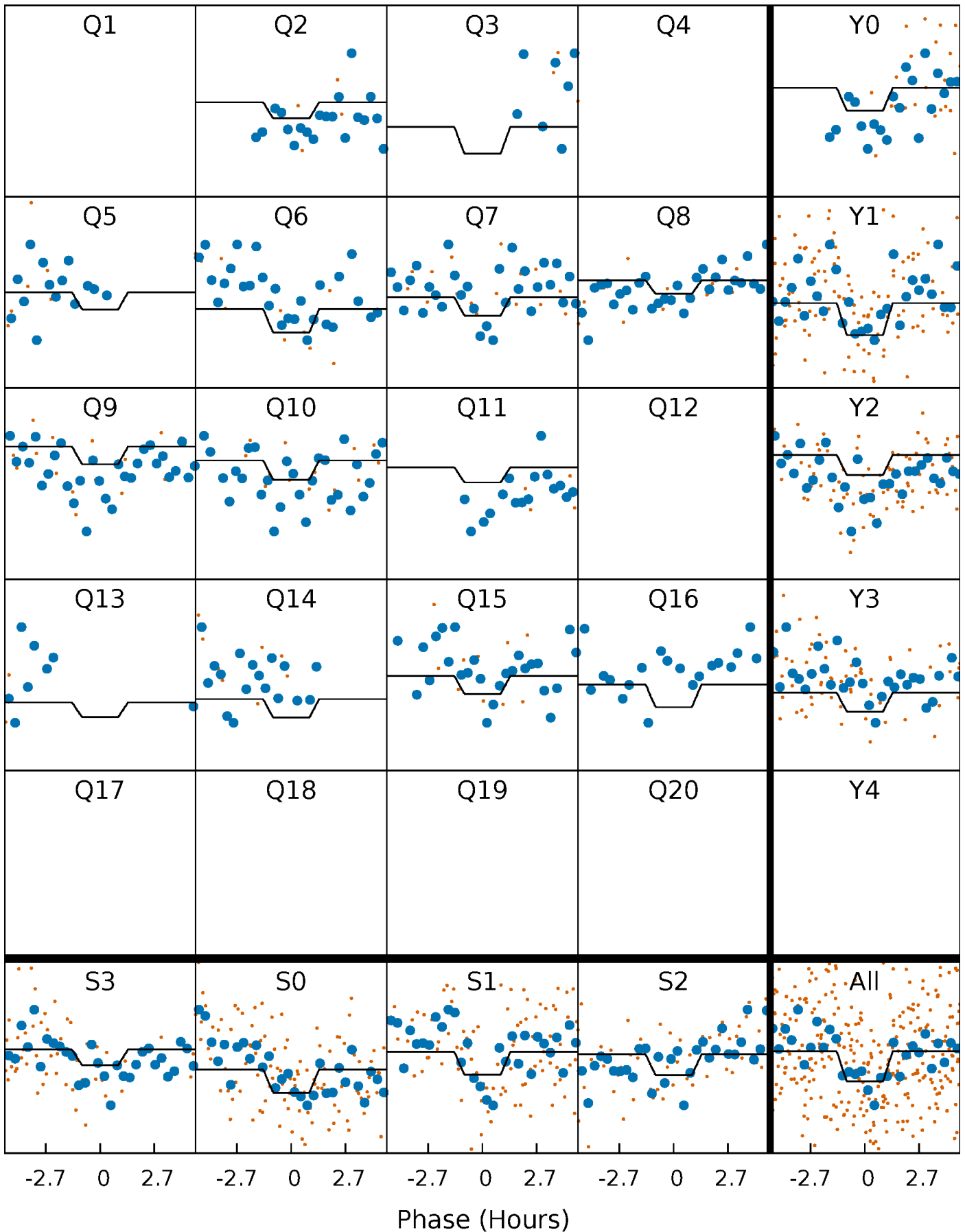
DV Quarter-Phased Transit Curves

TCE 009284487-10 P= 24.617635 Days $T_0=153.902384$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

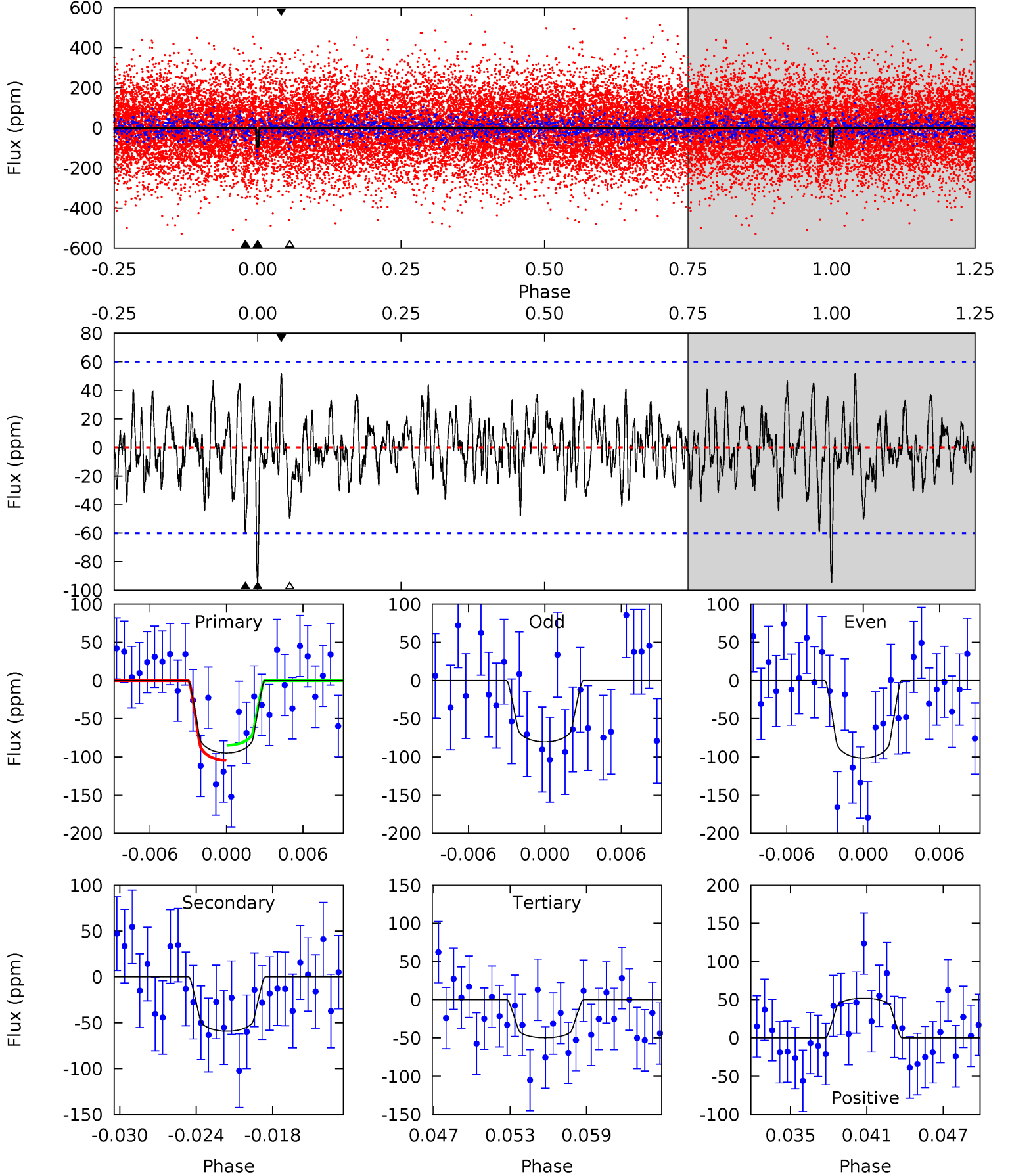
TCE 009284487-10 P= 24.616747 Days $T_0=153.912401$ (BKJD)



DV Model-Shift Uniqueness Test

009284487-10, $P = 24.617635$ Days, $E = 129.284749$ Days

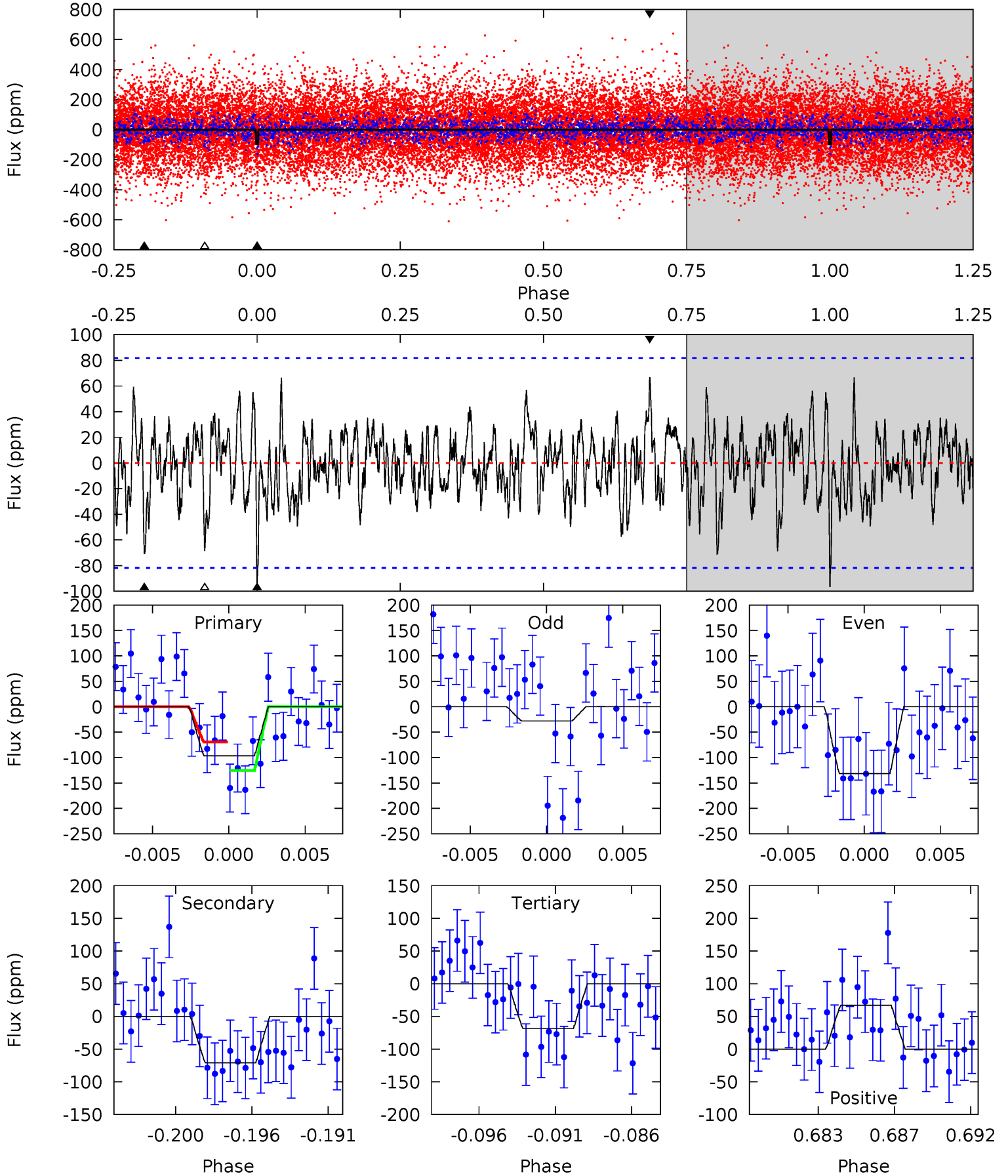
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.09	5.06	4.25	4.43	5.13	2.75	1.46	3.84	3.66	0.81	0.63	0.84	1.02	0.35	0.85



Alt Model-Shift Uniqueness Test

009284487-10, P = 24.616747 Days, E = 129.295654 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.11	4.49	4.34	4.24	5.18	2.84	1.38	1.76	1.87	0.15	0.25	3.10	1.60	0.41	1.78



Stellar Parameters For KIC 009284487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7207^{+200}_{-275}	$4.254^{+0.087}_{-0.203}$	$-0.060^{+0.200}_{-0.400}$	$1.480^{+0.515}_{-0.221}$	$1.434^{+0.218}_{-0.196}$	$0.623^{+0.248}_{-0.336}$
	+3%/-4%	+2%/-5%	+333%/-667%	+35%/-15%	+15%/-14%	+40%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009284487-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-59 ± 12	$2.01^{+1.39}_{-1.14}$	1267^{+96}_{-68}	5660^{+3692}_{-1059}	266^{+1316}_{-169}
Alt.	-71 ± 16	$1.79^{+1.36}_{-1.10}$	1267^{+95}_{-74}	6344^{+4806}_{-1476}	426^{+2226}_{-298}

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

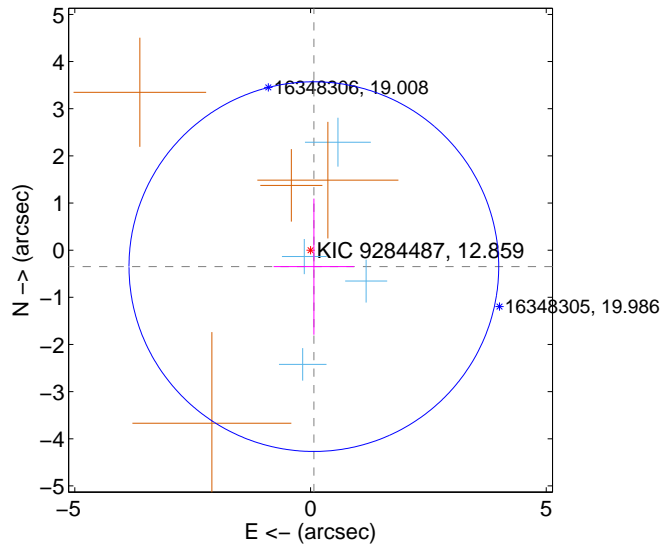
Supplemental centroid analysis for 009284487-10. Kepler magnitude: 12.86. Transit SNR 7.47

There are 4 quarters with good PRF difference image offsets

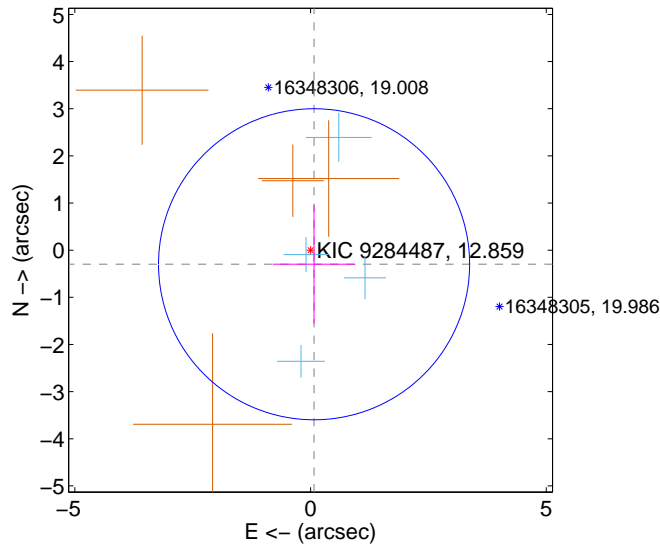
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.356 ± 1.307	0.27	-0.071 ± 0.854	-0.349 ± 1.444
PRF-fit source offset from KIC position	0.308 ± 1.100	0.28	-0.075 ± 0.874	-0.299 ± 1.255
photometric centroid source offset	1.17 ± 0.88	1.34	-0.78 ± 0.87	0.87 ± 0.88

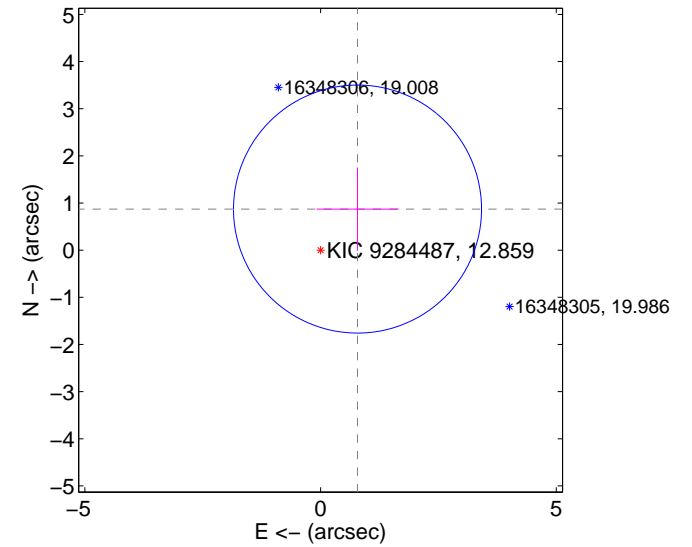
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

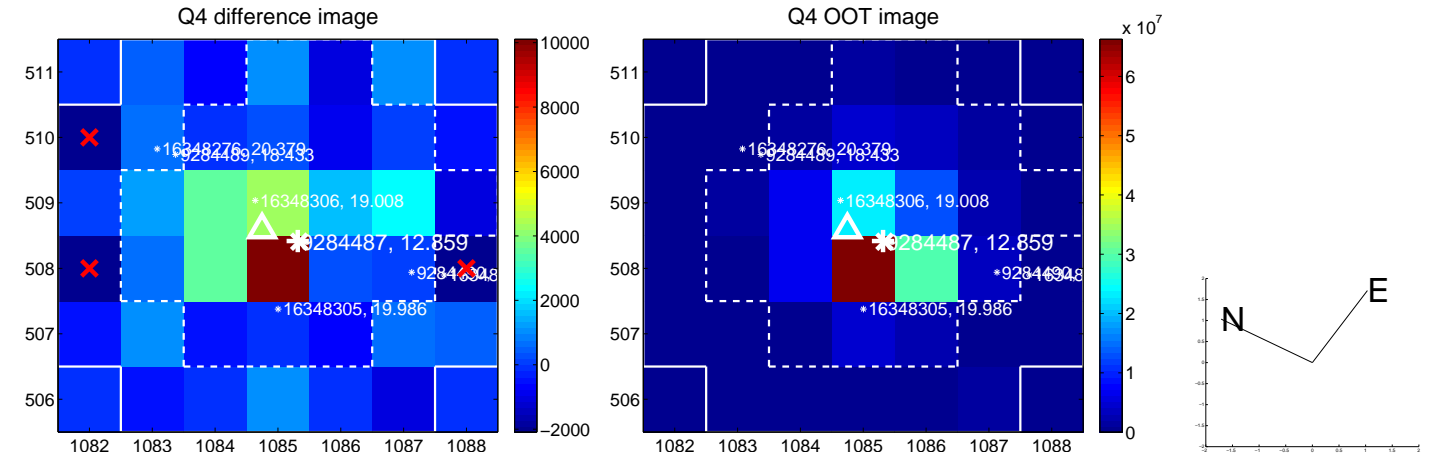
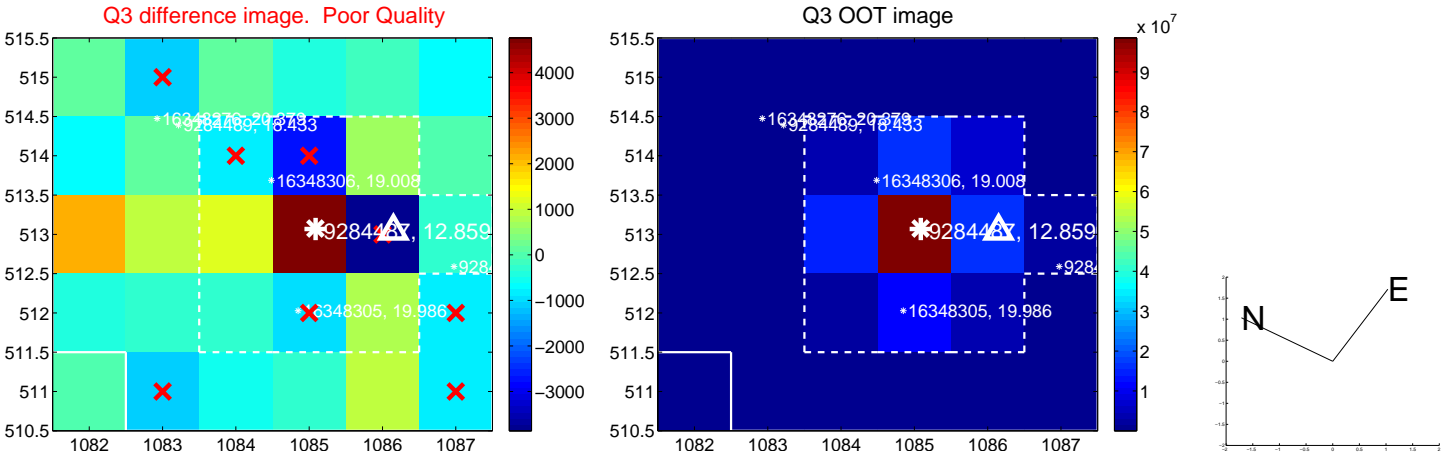
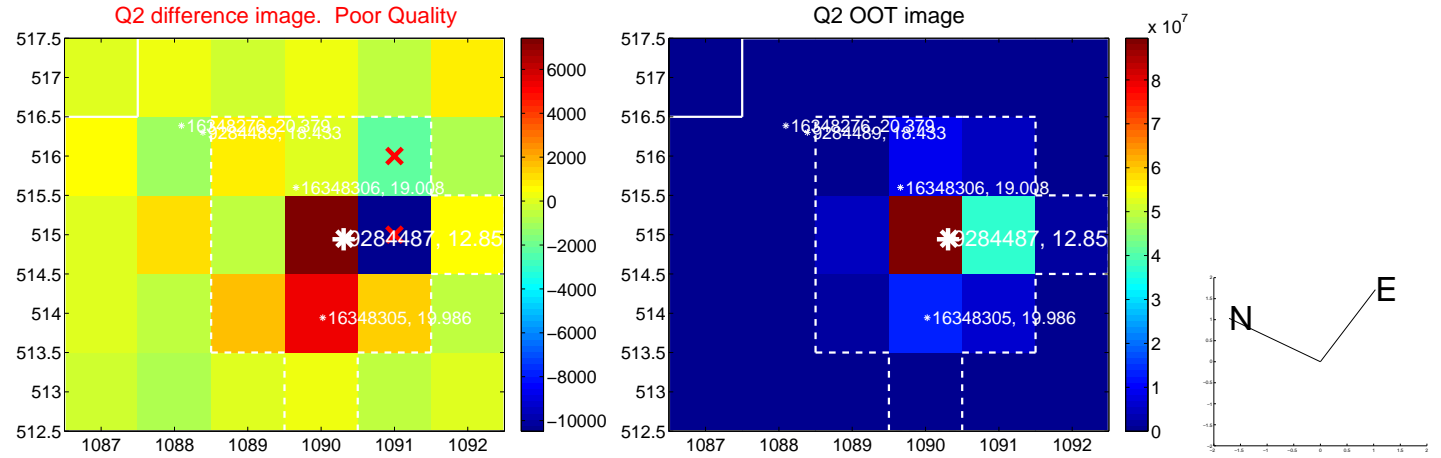
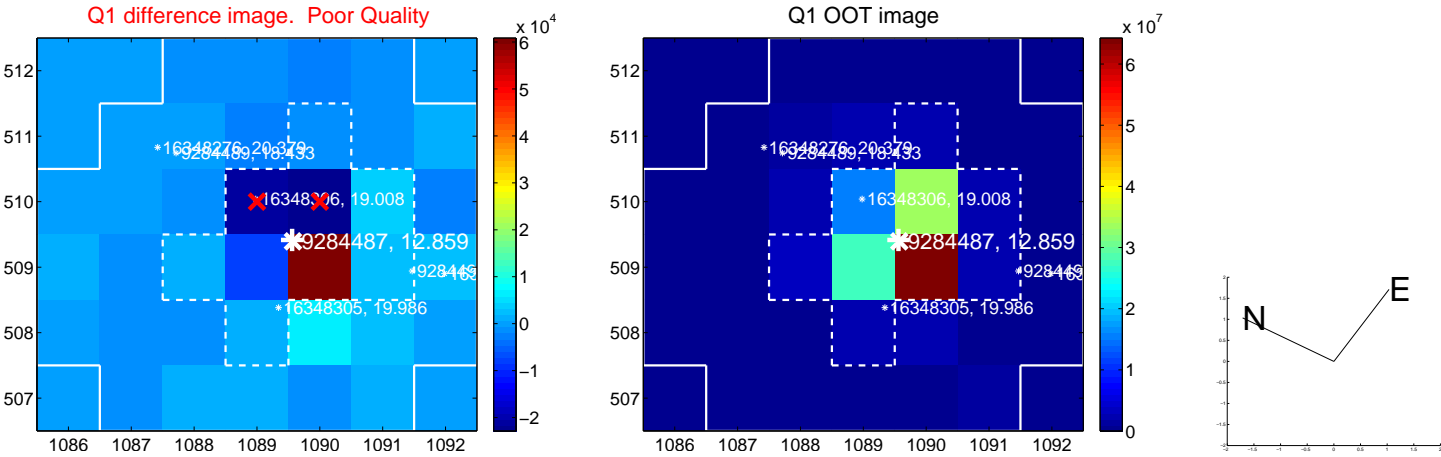


offset from photometric centroids

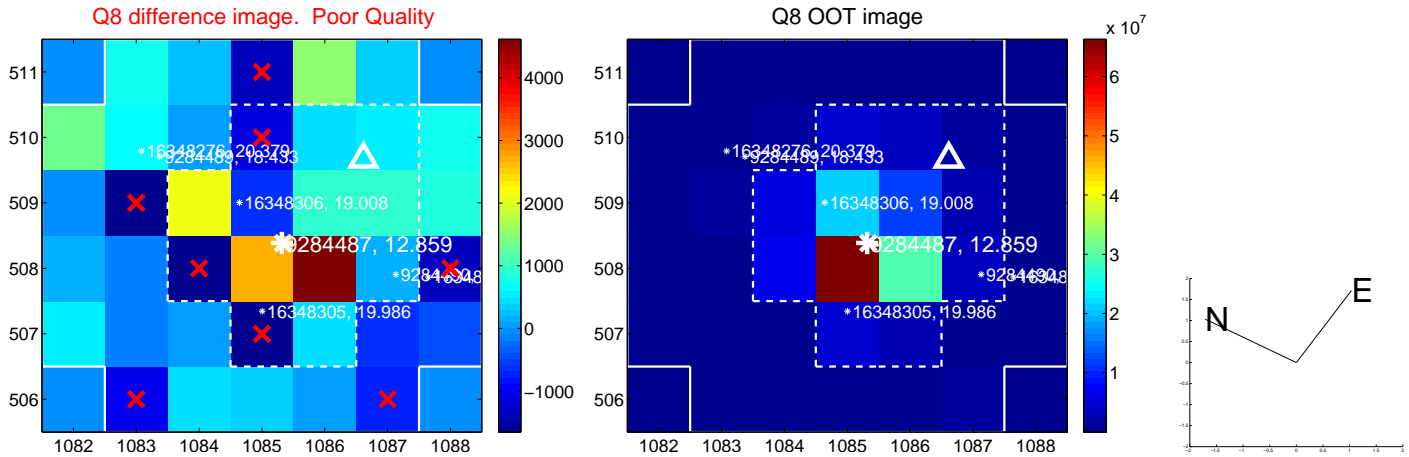
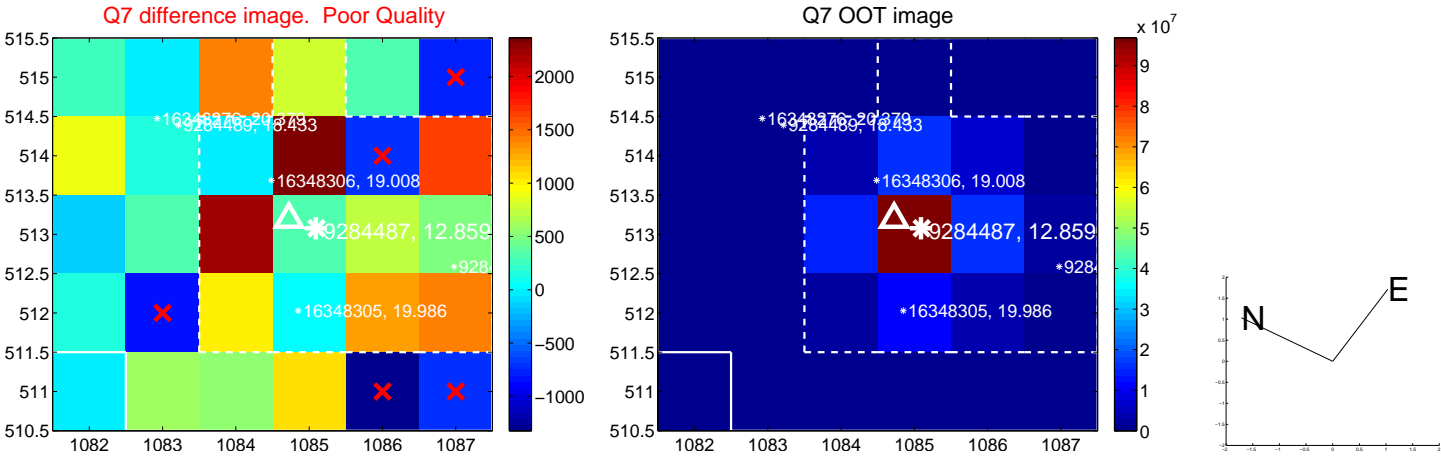
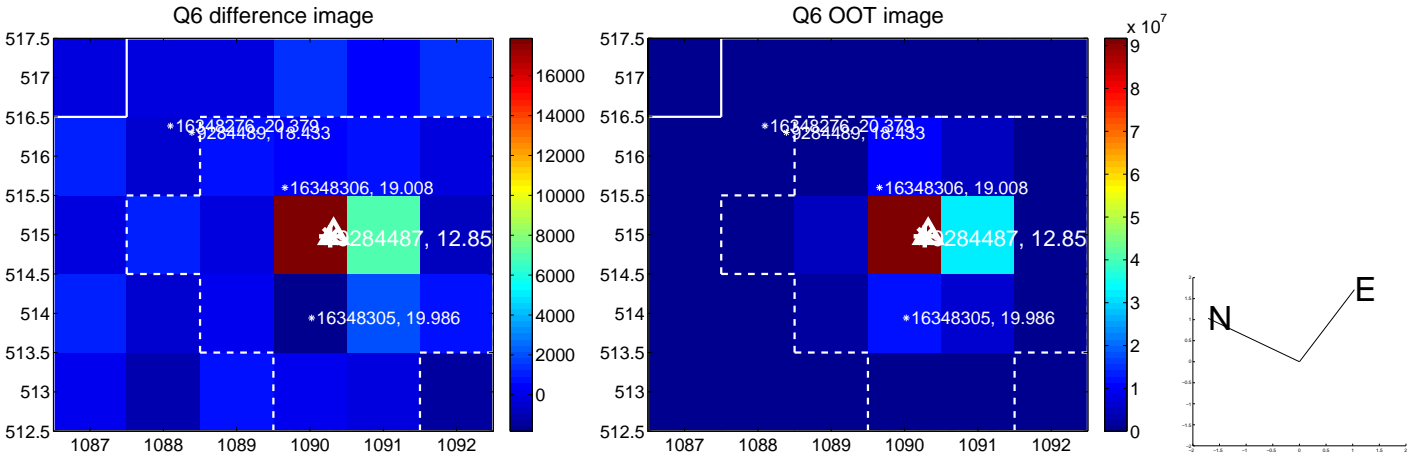
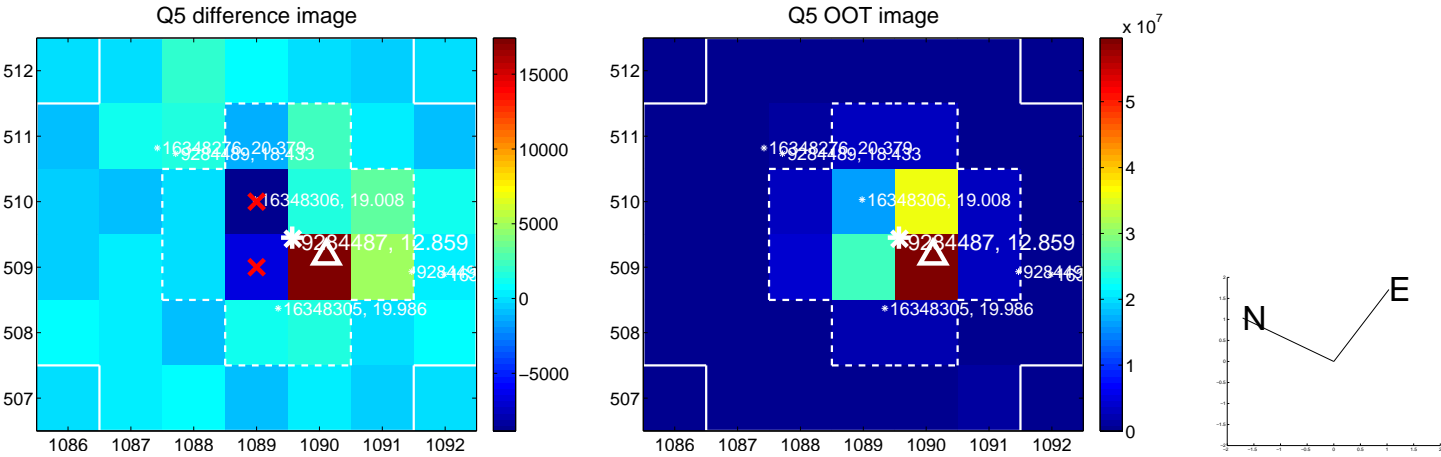


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

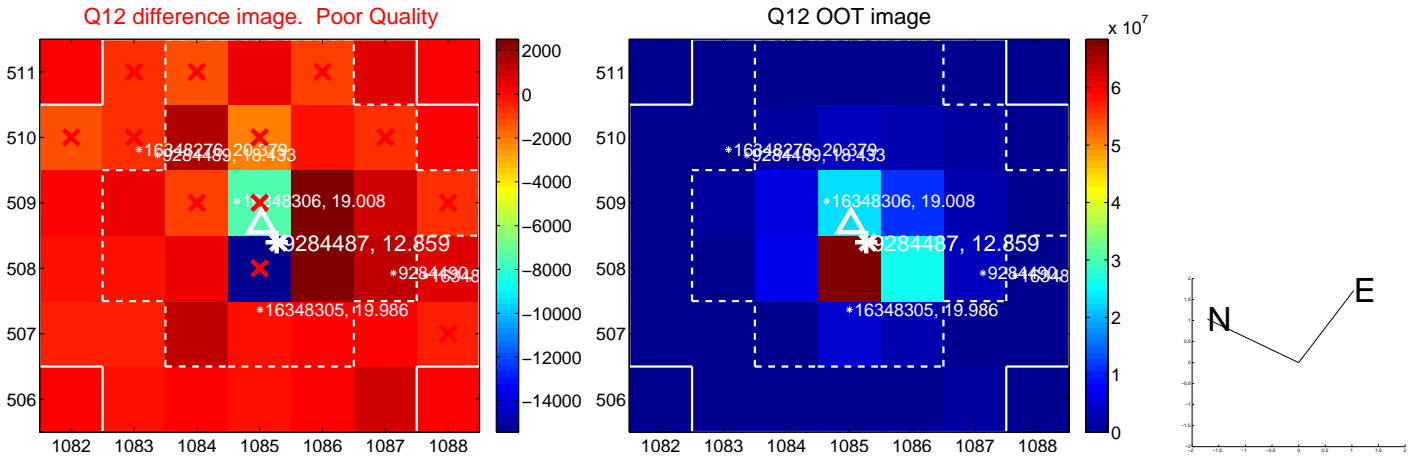
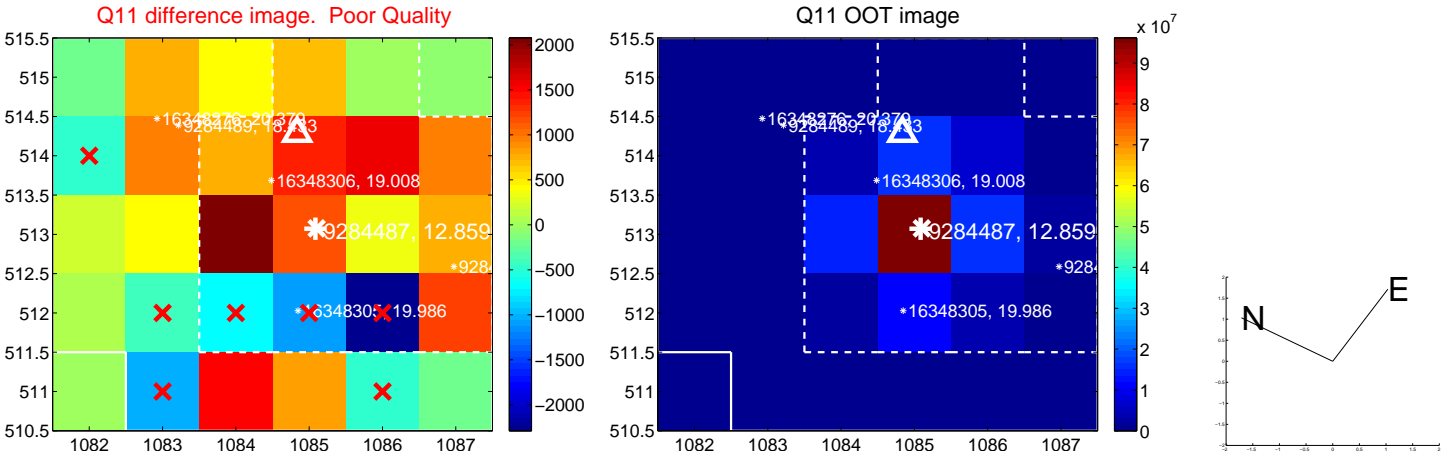
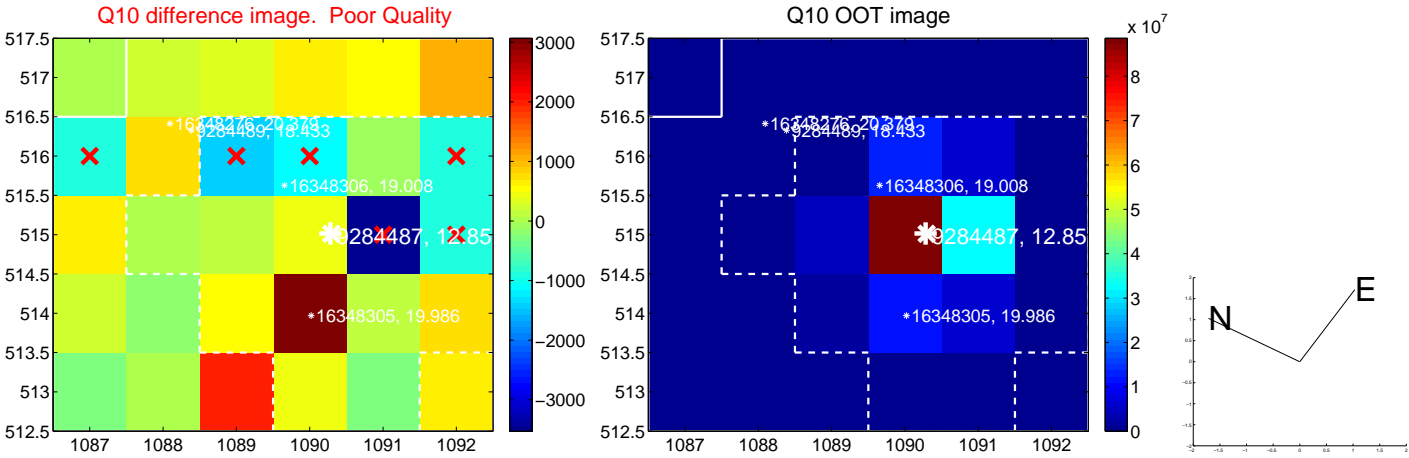
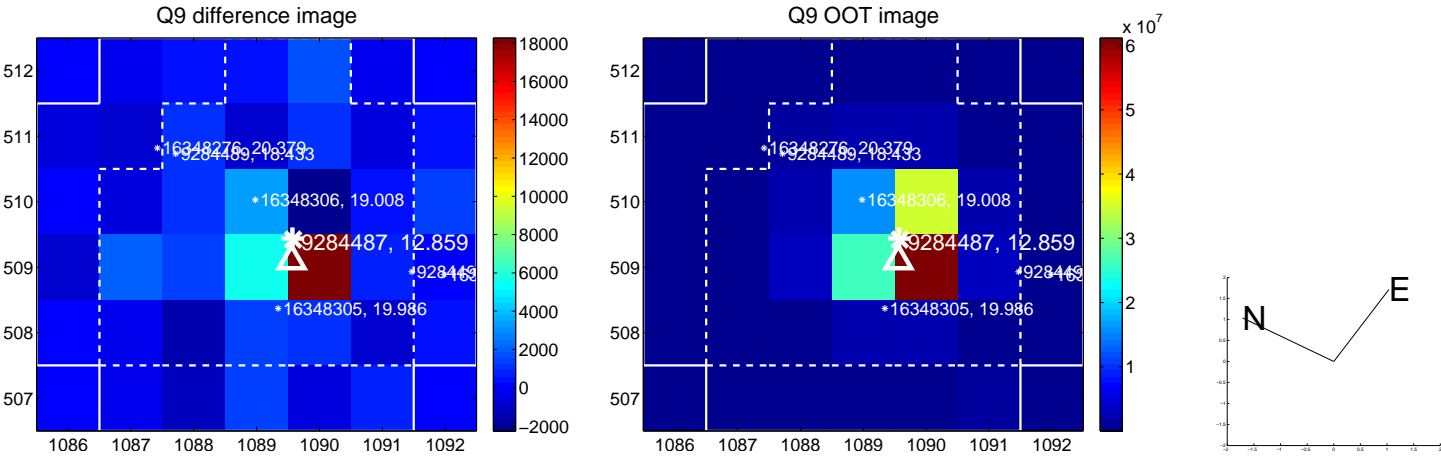
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



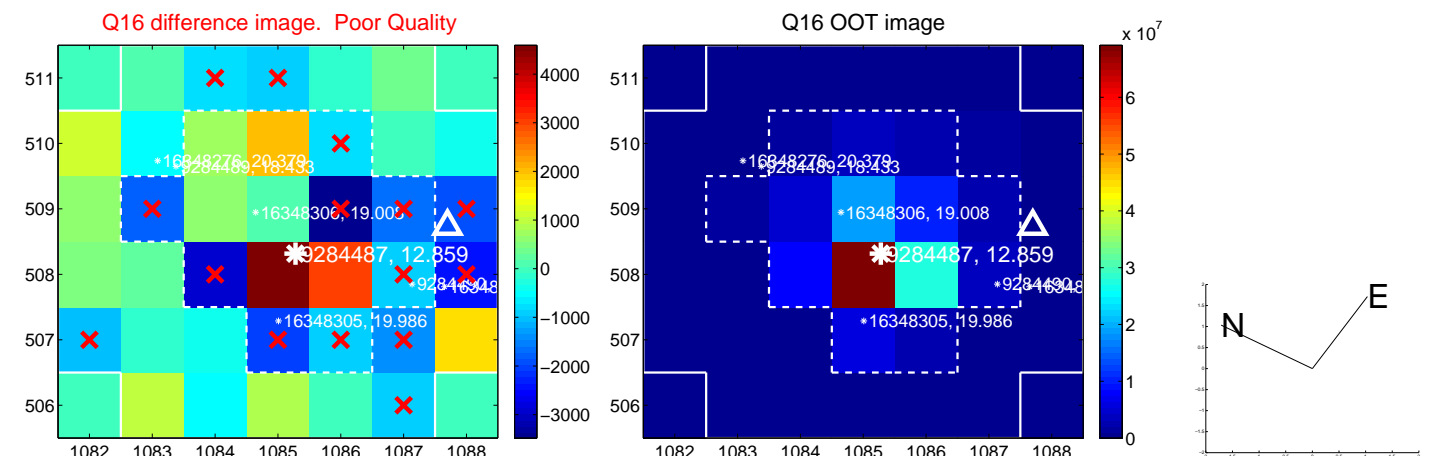
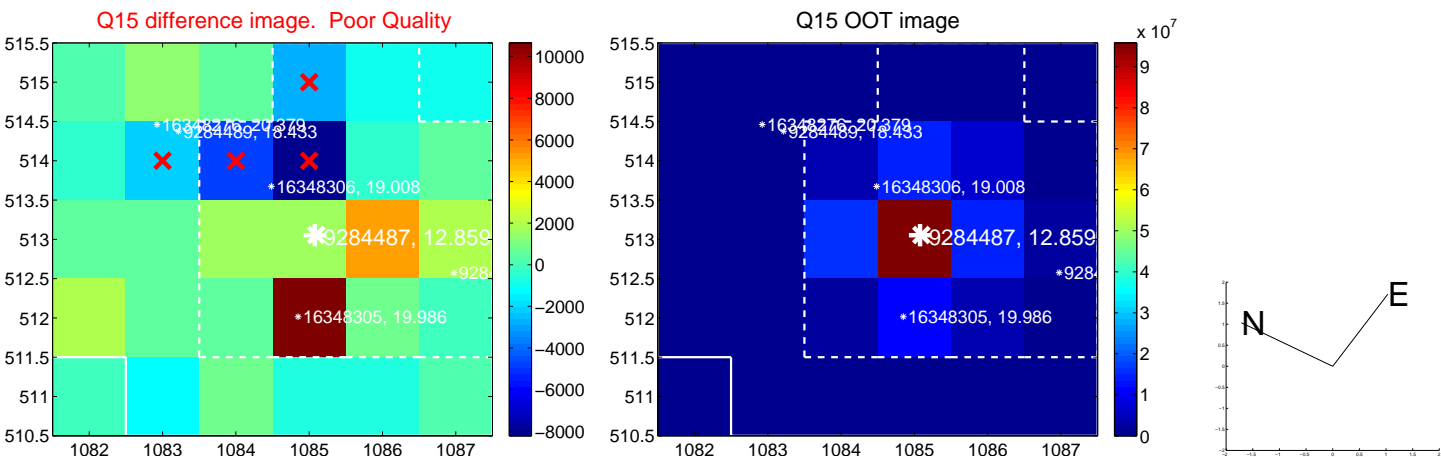
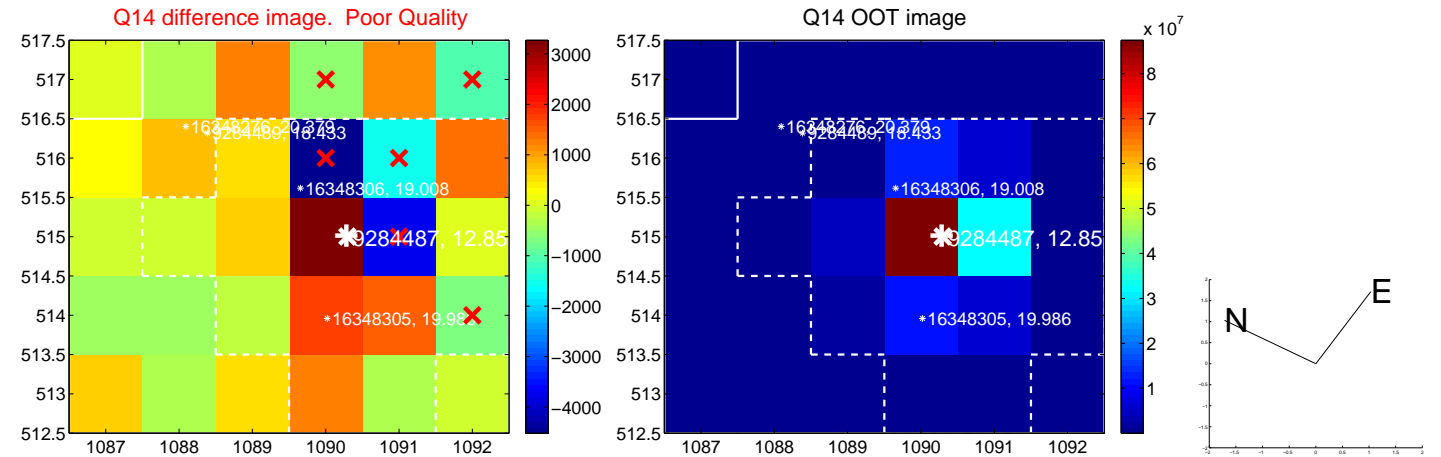
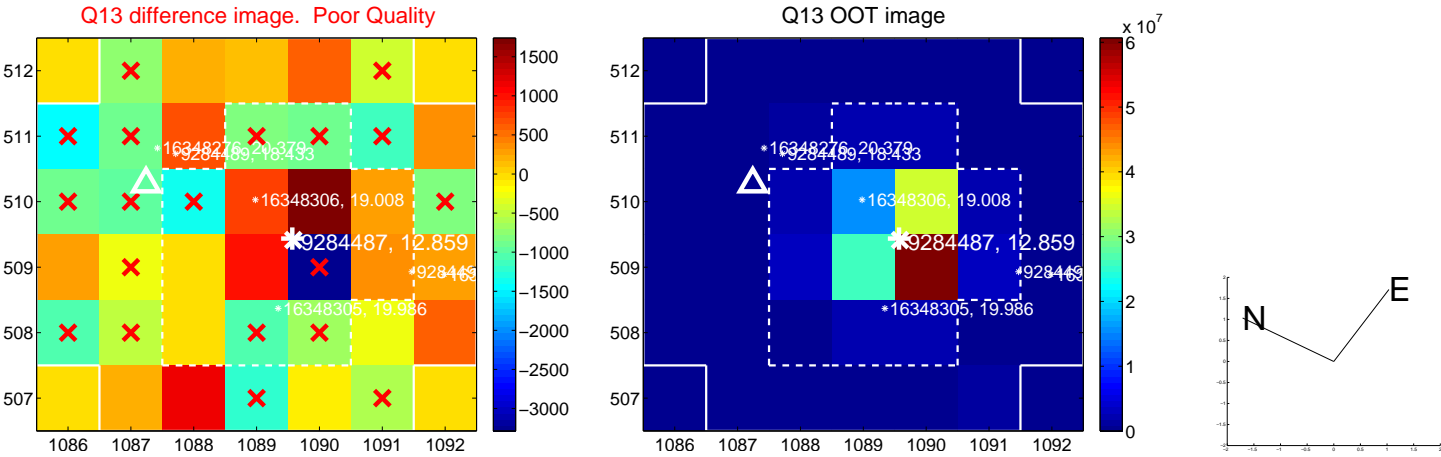
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



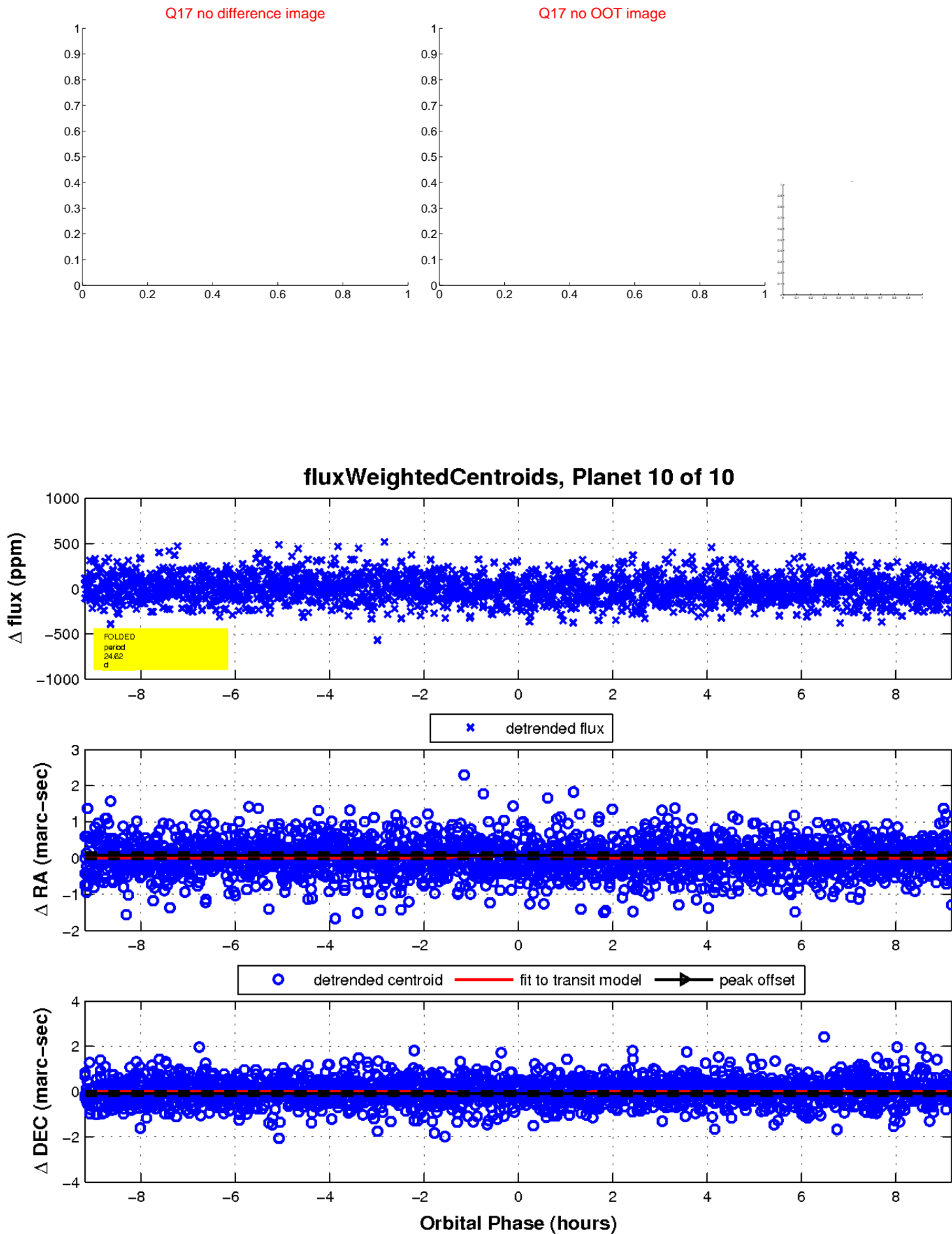
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

