SUPPLEMENTARY DATA FOR "Parallax of Head-Up Displays and Visual Safety for Driving"

Table S1. Date for Figure 9, Trends in VAS−F and VFS questionnaire scores under overall horizontal parallax conditions.

	Parallax (Mean ± standard deviation)							*F*	*p*
	0.0(n=17)	**1.65(n=17)**	**3.31(n=17)**	**6.24(n=17)**	**10.61(n=17)**	**13.67(n=17)**	**20.97(n=17)**		
VAS-F	18.65±27.63	13.71±28.23	2.76±29.49	10.00±29.50	8.82±28.14	12.24±26.61	19.65±27.12	0.733	0.624
VFS	20.00±7.66	18.76±10.46	15.06±8.88	17.88±10.20	18.71±11.94	17.65±8.31	23.06±12.29	0.993	0.434

Table S2. Date for Figure 10, Trends in VAS−F and VFS questionnaire scores in stepped horizontal parallax conditions.

	Differences Parallax (Mean ± standard deviation)							*F*	*p*
	0.0(n=17)	**0.85(n=17)**	**1.65(n=17)**	**2.45(n=17)**	**3.31(n=17)**	**4.05(n=17)**	**4.64(n=17)**		
VAS-F	6.53±36.17	-4.76±32.53	5.24±38.67	10.12±32.27	11.71±35.41	14.00±42.52	18.88±38.36	0.716	0.637
VFS	24.12±21.53	19.41±17.00	24.35±20.07	25.24±20.10	27.82±22.12	31.47±22.50	32.76±21.34	0.842	0.540

Table S3. Date for Figure 11, Trends in total performance and error rate of D2 test task under horizontal overall horizontal parallax conditions.

	Parallax (Mean ± standard deviation)							*F*	*p*
	0.0(n=17)	**1.65(n=17)**	**3.31(n=17)**	**6.24(n=17)**	**10.61(n=17)**	**13.67(n=17)**	**20.97(n=17)**		
TN-E	567.24±71.59	578.41±84.22	572.00±83.33	568.12±60.48	560.88±91.43	573.71±81.42	483.35±137.02	2.323	0.038
E	3.56±2.69	3.64±3.03	3.58±3.25	4.77±5.55	6.04±7.25	6.51±8.47	13.25±12.22	4.291	0.001

Table S4. Date for Figure 12 and Figure 13, Stepped horizontal parallax D2 test task analysis results

	Differences Parallax Median M(P25，P75)							*Kruskal–Wallis test statistic H–value*	*p*
	0(n=17)	**0.85(n=17)**	**1.65(n=17)**	**2.45(n=17)**	**3.31(n=17)**	**4.05(n=17)**	**4.64(n=17)**		
TNE	627.00 (611.5, 652.5)	635.00 (599.5, 650.0)	632.00 (583.0, 645.5)	620.00 (589.5, 641.0)	612.00 (563.0, 635.0)	565.00 (506.5, 614.0)	514.00 (477.5, 567.0)	43.342	0.000**
E1	1.38 (0.5, 2.9)	1.64 (0.9, 2.7)	1.680 (0.8, 2.8)	1.58 (1.2, 4.6)	2.76 (1.5, 7.3)	7.750 (3.3, 10.8)	11.30 (3.2, 14.2)	38.112	0.000**
E2	0.18 (0.1, 0.5)	0.31 (0.1, 0.5)	0.30 (0.1, 0.7)	0.34 (0.1, 1.2)	0.52 (0.1, 2.0)	1.67 (0.5, 4.1)	1.76 (0.6, 5.8)	30.650	0.000**
CP	180.00 (175.0, 197.5)	185.00 (170.5, 194.0)	180.00 (165.5, 191.0)	176.00 (159.5, 188.5)	165.00 (128.5, 184.5)	129.00 (96.0, 168.0)	92.00 (66.0, 161.0)	45.950	0.000**

* p<0.05, ** p<0.01

Table S5. Date for Figure 14 and Figure 15, Error rate vs. parallax step value of the fitted raw data

Differences Parallax (mrad)	**0**	**0.85**	**1.65**	**2.45**	**3.31**	**4.05**	**4.64**
E1	1.380	1.640	1.680	1.580	2.760	7.750(	11.300
E2	0.180	0.310	0.300	0.340	0.520	1.670	1.760

Table S6. Date for Figure 16, Trends in VAS–F and VFS fatigue evaluation scores under different vertical parallax conditions.

	Parallax (Mean ± standard deviation)							*F*	*p*
	0.0(n=17)	**2.24(n=17)**	**4.05(n=17)**	**6.61(n=17)**	**8.96(n=17)**	**12.27(n=17)**	**15.15(n=17)**		
VAS-F	2.18±33.85	-3.35±33.64	5.35±41.10	4.65±42.27	7.35±39.72	10.00±39.11	2.47±36.12	0.213	0.972
VFS	14.59±12.48	16.41±13.75	17.88±16.19	17.76±16.39	19.47±17.17	18.65±16.34	18.65±14.71	0.195	0.978

Table S7. Date for Figure 17, Trends in VAS–F and VFS questionnaire scores in stepped vertical parallax conditions.

	Differences Parallax (Mean ± standard deviation)							*F*	*p*
	0.0(n=17)	0.53(n=17)	1.71(n=17)	2.24(n=17)	2.88(n=17)	3.41(n=17)	4.05(n=17)		
VAS-F	19.35±41.41	28.29±40.73	27.76±42.26	25.94±38.89	31.24±43.38	28.00±44.51	26.12±45.66	0.127	0.993
VFS	25.12±19.25	26.94±18.84	26.06±17.23	28.76±14.01	30.71±18.27	29.71±17.12	30.29±20.33	0.254	0.957

Table S8. Date for Figure 18, Stepped vertical parallax D2 test task analysis result

	Differences Parallax Median M(P25，P75)							*Kruskal–Wallis test statistic H–value*	*p*
	0(n=17)	0.53(n=17)	1.71(n=17)	2.24(n=17)	2.88(n=17)	3.41(n=17)	4.05(n=17)		
CP	180.000 (159.0,186.5)	167.000 (155.0,188.0)	174.000 (151.5,184.5)	165.000 (149.0,178.0)	157.000 (136.0,168.5)	157.000 (141.0,164.5)	146.000 (129.0,176.5)	14.293	0.027*
FR	5.000 (0.0,8.0)	6.000 (0.0,9.0)	4.000 (0.0,9.5)	6.000 (0.0,9.5)	8.000 (1.0,10.5)	9.000 (2.5,13.5)	12.000(7.5,19.5)	15.079	0.020*

* $p<0.05$