Geophysical Journal International 2002, 147: 356-388.

Supplementary material to Van Der Woerd J., P. Tapponnier, F.J. Ryerson, A.S. Mériaux, B. Meyer, Y. Gaudemer, R. Finkel, M. Caffee, Zhao G., Xu Z., Uniform Post-Glacial slip-rate along the central 600 Km of the Kunlun Fault (Tibet), from ^{26}Al, ^{10}Be, and ^{14}C dating of riser offsets, and climatic origin of the regional morphology, *Geophysical Journal International*, 147, 356-388, 2002.

Appendix A : Dating results and associated figures

Table A1. Analytical results of cosmogenic dating of 29 samples at site 1.

Sample*	^{10}Be§ (10^5 atoms/g)	^{26}Al§ (10^5 atoms/g)	^{10}Be model age# (yr)	^{26}Al model age# (yr)	Average$ (yr)	Ratio ^{26}Al /^{10}Be
Surface T1						
KL2D(a)	0.225 ± 0.06	1.18 ± 0.135	265 ± 88	228 ± 57	239 ± 48	0.86
KL2D(b)	0.473 ± 0.037	2.14 ± 0.157	558 ± 120	414 ± 97	471 ± 76	0.74
KL2D(d)	0.137 ± 0.046	1.29 ± 0.168	162 ± 63	250 ± 65	205 ± 45	1.55
KL2D(e)	0.258 ± 0.027	1.41 ± 0.124	304 ± 69	273 ± 65	288 ± 47	0.90
KL2D(f)	0.149 ± 0.025	1.13 ± 0.23	176 ± 46	218 ± 66	190 ± 38	1.24
KL2D(g)	1.25 ± 0.051	7.52 ± 0.264	1476 ± 301	1455 ± 329	1467 ± 222	0.99
KL2D(h)	1.76 ± 0.076	13.1 ± 0.610	2073 ± 424	2536 ± 553	2245 ± 337	1.22
KL2D(i)	0.493 ± 0.113	1.26 ± 0.125	582 ± 177	244 ± 60	279 ± 57	0.42
KL2U(a)	1.61 ± 0.069	10.5 ± 1.37	1901 ± 389	2035 ± 526	1948 ± 313	1.07
KL2U(b)	5.50 ± 0.093	32.6 ± 1.03	6495 ± 1304	6332 ± 1430	6421 ± 963	0.97
KL2U(c)	0.204 ± 0.033	1.34 ± 0.138	241 ± 62	260 ± 64	250 ± 44	1.08
KL2U(d)	1.25 ± 0.123	7.35 ± 0.617	1478 ± 329	1423 ± 340	1452 ± 237	0.96
KL2U(e)	0.31 ± 0.023	1.33 ± 0.097	366 ± 78	258 ± 61	299 ± 48	0.71
Surface T2						
KL3D(a)	2.17 ± 0.103	13.2 ± 0.614	2556 ± 526	2550 ± 582	2553 ± 390	1.00
KL3D(b)	2.08 ± 0.068	12.9 ± 0.485	2454 ± 497	2508 ± 569	2477 ± 374	1.02
KL3D(c)	9.74 ± 0.194	59.2 ± 1.59	11516 ± 2315	11514 ± 2593	11515 ± 1727	1.00
KL3D(d)	3.16 ± 0.178	N.D.†	3727 ± 774	N.D.	N.D.	N.D.
KL3D(e)	2.48 ± 0.095	14.9 ± 0.503	2932 ± 597	2882 ± 652	2909 ± 440	0.98
KL3D(f)	2.98 ± 0.099	17.9 ± 0.667	3523 ± 714	3470 ± 787	3499 ± 529	0.98
KL3U(a)	3.01 ± 0.125	18.4 ± 0.892	3557 ± 727	3560 ± 815	3558 ± 542	1.00
KL3U(b)	2.46 ± 0.128	15.9 ± 0.854	2908 ± 601	3088 ± 710	2983 ± 459	1.06
KL3U(3)	6.09 ± 0.248	32.3 ± 1.24	7193 ± 1468	6273 ± 1423	6719 ± 1022	0.87
KL3U(4)	2.03 ± 0.136	12.6 ± 0.643	2396 ± 505	2437 ± 559	2414 ± 375	1.02
Surface T3						
KL4D(d)	4.31 ± 0.106	24.3 ± 1.44	5095 ± 1027	4723 ± 989	4902 ± 712	0.93
KL4D(e)	4.5 ± 0.133	24.7 ± 0.85	5312 ± 1074	5015 ± 1032	5158 ± 744	0.94
KL4D(f)	4.81 ± 0.166	28.2 ± 1.09	5681 ± 1153	5483 ± 1127	5580 ± 806	0.97
KL4U(1)	18.9 ± 0.403	119.0 ±3.47	22392 ± 4504	23324 ± 4746	22833 ± 3267	1.04
KL4U(2)	4.27 ± 0.106	23.4 ± 1.05	5037 ± 1015	4683 ± 972	4852 ± 702	0.93
KL4U(4)	4.33 ± 0.172	25.3 ± 1.69	5110 ± 1042	4970 ± 1058	5041 ± 742	0.97

*Sample numbers increase with terrace height. Capital suffix D, and U, refer to downslope (north of fault-trace), and up-slope (south of fault-trace), sampling paths, respectively.

†N.D. is no data. For sample KL3D(d), low current prevented the determination of an ^{26}Al/^{27}Al ratio,

§Propagated analytical uncertainties include error on the blank, carrier and counting statistics.

#Propagated uncertainties on the model ages include a 20% uncertainty on the production rate.

$Average is a weighted mean of both ^{26}Al and ^{10}Be model ages, $[x]=[\sigma^2]\sum_{i=1}^{2}\frac{x_i}{\sigma_i^2}$, where $\frac{1}{[\sigma^2]}=\sum_{i=1}^{2}\frac{1}{\sigma_i^2}$.

Table A2. Analytical results of cosmogenic dating of 23 samples at site 2.

Sample*	^{10}Be§ (10^5 atoms/g)	^{26}Al§ (10^5 atoms/g)	^{10}Be model age# (yr)	^{26}Al model age# (yr)	Average$ (yr)	Ratio $^{26}Al/^{10}Be$
Terrace T3						
KL15U-1	5.60± 0.24	36.20 ± 1.17	6424 ± 1315	6964 ± 1411	6675 ± 962	1.08
KL15U-3	5.61 ± 0.34	34.60 ± 2.20	6431 ± 1343	6649 ± 1395	6536 ± 968	1.03
KL15U-4	5.65 ± 0.23	30.40 ± 1.18	6477 ± 1323	5834 ± 1189	6126 ± 884	0.90
KL15U-5	1.08 ± 0.28	37.50 ± 2.40	12381 ± 2497	7206 ± 1513	-	0.58
KL15U-6	5.83 ± 0.30	30.00 ± 3.57	6687 ± 1382	5760 ± 1340	6209 ± 962	0.86
KL15U-7	5.53 ± 0.19	31.20 ± 2.78	6344 ± 1289	5989 ± 1311	6169 ± 919	0.94
KL15D-1	6.04± 0.31	30.60 ± 1.53	6932 ± 1430	5886 ± 1213	6324 ± 925	0.85
KL15D-2	5.26 ± 0.21	16.54 ± 0.64	6037 ± 1232	3172 ± 646	-	0.53
KL15D-3	N.D.	31.00 ± 1.11	N.D.	5955 ± 1210	N.D.	N.D.
KL15D-4	5.25 ± 0.16	29.40 ± 1.27	6020 ± 1218	5641 ± 1154	5820 ± 838	0.94
KL15D-7	5.91 ± 0.41	15.10 ± 1.87	6783 ± 1437	2897 ± 681	-	0.43
KL15D-10	5.42 ± 0.23	33.80 ± 1.40	6216 ± 1272	6495 ± 1327	6350 ± 918	1.04
Terrace T4						
KL16U-1	7.82 ± 0.44	41.20 ± 4.39	8979 ± 1867	7919 ± 1795	8428 ± 1294	0.88
KL16U-2	12.30 ± 0.29	68.00 ± 2.40	14146 ± 2849	13117 ± 2664	13597 ± 1946	0.93
KL16U-3	11.50 ± 0.29	50.10 ± 4.09	13200 ± 2662	9649 ± 2084	10999 ± 1641	0.73
KL16U-5	7.90 ± 0.31	35.90 ± 2.72	9069 ± 1850	6903 ± 1476	7746 ± 1154	0.76
KL16U-6	6.52 ± 0.19	24.60 ± 3.17	7483 ± 1514	4730 ± 1125	-	0.63
KL16D-6	7.06 ± 0.45	43.10 ± 4.09	8102 ± 1700	8288 ± 1835	8188 ± 1247	1.02
Terrace T5						
KL17U-1	14.40 ± 0.39	63.60 ± 3.02	16564 ± 3343	12253 ± 2519	13814 ± 2012	0.74
KL17U-7	22.80 ± 0.56	120.70 ± 4.54	26313 ± 5302	23380 ± 4758	24688 ± 3541	0.89
KL17D-2	8.47 ± 0.34	45.50 ± 3.56	9725 ± 1984	8761 ± 1882	9218 ± 1365	0.90
KL17D-4	11.95 ± 0.44	78.20 ± 9.30	13690 ± 2785	15079 ± 3509	14227 ± 2181	1.10
KL17D-7	12.71 ± 0.61	63.20 ± 3.95	14609 ± 3004	12177 ± 2552	13196 ± 1945	0.83

*Sample numbers increase with terrace height. Capital suffix D and U refer to downslope (north of fault-trace), and up-slope (south of fault-t sampling paths, respectively.

†N.D. is no data.

§Propagated analytical uncertainties include error on the blank, carrier and counting statistics.

#Propagated uncertainties on the model ages include a 20% uncertainty on the production rate.

$Average is a weighted mean of both ^{26}Al and ^{10}Be model ages, $[x]=[\sigma^2]\sum_{i=1}^{2}\frac{x_i}{\sigma_i^2}$, where $\frac{1}{[\sigma^2]}=\sum_{i=1}^{2}\frac{1}{\sigma_i^2}$; not calculated for Al/Be ratios less than 0

Table A3. Analytical results of cosmogenic dating of 41 samples at site 3.

Sample*	^{10}Be§ (10^5 atoms/g)	^{26}Al§ (10^5 atoms/g)	^{10}Be model age# (yr)	^{26}Al model age# (yr)	Average$ (yr)	Ratio ^{26}Al /^{10}Be
Terrace T3-1						
KL6U-1	7.82 ± 0.38	47.40 ± 1.81	12235 ± 2519	12438 ± 2533	12336 ± 1786	1.02
KL6U-2	3.45 ± 0.19	17.70 ± 0.82	5395 ± 1121	4629 ± 950	4949 ± 725	0.86
KL6U-3	3.85 ± 0.12	20.90 ± 0.63	6020 ± 1219	5453 ± 1103	5708 ± 818	0.91
KL6U-4	5.14 ± 0.22	26.60 ± 0.87	8037 ± 1643	6957 ± 1410	7415 ± 1070	0.87
KL6U-5	6.28 ± 0.17	N.D.	9823 ± 1983	N.D.	N.D.	N.D.
KL6U-6	3.84 ± 0.14	21.10 ± 0.88	6006 ± 1222	5517 ± 1127	5742 ± 828	0.92
KL6D-1	2.87 ± 0.11	15.90 ± 0.58	4486 ± 915	4164 ± 846	4313 ± 621	0.93
KL6D-2	10.40 ± 0.31	61.80 ± 1.75	16363 ± 3309	16231 ± 3279	16296 ± 2329	0.99
KL6D-3	7.09 ± 0.27	37.30 ± 1.50	11085 ± 2257	9765 ± 1992	10343 ± 1494	0.88
KL6D-4	5.20 ± 0.17	27.80 ± 0.77	8134 ± 1648	7272 ± 1468	7653 ± 1096	0.89
KL6D-5	2.13 ± 0.13	14.20 ± 0.78	3328 ± 695	3695 ± 766	3494 ± 515	1.11
KL6D-6	3.57 ± 0.15	16.70 ± 0.61	5576 ± 1141	4357 ± 886	4816 ± 700	0.78
Terrace T3-2						
KL7U-1	4.40 ± 0.20	23.00 ± 1.31	6881 ± 1412	6016 ± 1251	6396 ± 936	0.87
KL7U-2	3.88 ± 0.18	24.70 ± 1.19	6064 ± 1246	6460 ± 1329	6249 ± 909	1.07
KL7U-3	4.10 ± 0.15	23.70 ± 0.71	6401 ± 1302	6194 ± 1253	6294 ± 903	0.97
KL7U-4	4.58 ± 0.15	12.60 ± 0.41	7163 ± 1451	3285 ± 666	-	0.46
KL7U-5	4.32 ± 0.18	25.70 ± 1.48	6758 ± 1381	6721 ± 1399	6740 ± 983	0.99
KL7U-6	3.46 ± 0.16	22.60 ± 0.59	5406 ± 1109	5897 ± 1189	5634 ± 811	1.09
KL7D-1	28.40 ± 0.95	144.00 ± 3.09	44750 ± 9076	38239 ± 7692	40961 ± 5868	0.85
KL7D-2	3.92 ± 0.17	21.90 ± 0.81	6127 ± 1254	5735 ± 1166	5917 ± 854	0.94
KL7D-3	5.11 ± 0.25	32.00 ± 1.12	7985 ± 1646	8366 ± 1699	8169 ± 1182	1.05
KL7D-4	3.48 ± 0.16	18.30 ± 1.13	5443 ± 1117	4779 ± 1000	5074 ± 745	0.88
KL7D-5	5.89 ± 0.24	29.10 ± 0.85	9216 ± 1880	7604 ± 1537	8250 ± 1190	0.83
KL7D-6	5.86 ± 0.19	28.50 ± 1.09	9168 ± 1857	7449 ± 1517	8137 ± 1175	0.81
Terrace T3-3						
KL8U-1	3.71 ± 0.20	18.60 ± 0.62	5795 ± 1200	4853 ± 984	5232 ± 761	0.84
KL8U-2	9.18 ± 0.23	46.90 ± 1.83	14372 ± 2898	12307 ± 2508	13191 ± 1896	0.86
KL8U-4	4.28 ± 0.19	23.80 ± 0.73	6686 ± 1371	6229 ± 1261	6438 ± 928	0.93
KL8U-5	4.07 ± 0.19	23.70 ± 0.85	6366 ± 1308	6187 ± 1257	6273 ± 907	0.97
KL8U-10	3.33 ± 0.18	17.50 ± 0.88	5198 ± 1076	4565 ± 941	4840 ± 708	0.88
KL8U-13	3.43 ± 0.19	20.00 ± 0.83	5365 ± 1115	5225 ± 1068	5292 ± 771	0.97
KL8U-15	18.10 ± 0.43	108.00 ± 2.83	28384 ± 5716	28598 ± 5768	28490 ± 4060	1.01
KL8D-1	4.09 ± 0.17	26.50 ± 0.74	6396 ± 1306	6939 ± 1401	6648 ± 955	1.08
KL8D-2	4.14 ± 0.20	21.70 ± 0.99	6473 ± 1333	5666 ± 1162	6015 ± 876	0.88
KL8D-3	3.95 ± 0.19	20.20 ± 0.96	6169 ± 1270	5273 ± 1084	5651 ± 824	0.85
KL8D-4	3.68 ± 0.20	20.40 ± 0.67	5747 ± 1193	5343 ± 1083	5526 ± 802	0.93
KL9U-1	6.71 ± 0.28	46.90 ± 1.90	10497 ± 2144	12289 ± 2508	11254 ± 1630	1.17
KL9U-2	3.91 ± 0.32	30.80 ± 4.05	6107 ± 1321	8052 ± 1927	6729 ± 1090	1.32
KL9U-3	4.60 ± 0.86	26.10 ± 1.98	7193 ± 1971	6832 ± 1461	6960 ± 1174	0.95
KL9U-4	4.44 ± 0.39	20.10 ± 1.36	6934 ± 1518	5247 ± 1108	5833 ± 895	0.76
KL9U-5	5.54 ± 0.21	25.80 ± 0.93	8659 ± 1764	6741 ± 1370	7463 ± 1082	0.78
KL9U-6	3.22 ± 0.14	19.30 ± 0.78	5024 ± 1030	5041 ± 1029	5033 ± 728	1.00

*Sample numbers increase with terrace height. Capital suffix D, and U, refer to downslope (north of fault-trace), and up-slope (south of fault-tı sampling paths, respectively.

†N.D. is no data.

§Propagated analytical uncertainties include error on the blank, carrier and counting statistics.

#Propagated uncertainties on the model ages include a 20% uncertainty on the production rate.

$Average is a weighted mean of both 26Al and 10Be model ages, $[x] = [\sigma^2] \sum_{i=1}^{2} \frac{x_i}{\sigma_i^2}$, where $\frac{1}{[\sigma^2]} = \sum_{i=1}^{2} \frac{1}{\sigma_i^2}$; not calculated for Al/Be ratios less

0.70.

Table A4. ^{14}C ages of samples at NZH site.

Terrace	Sample	$\delta^{13}C$	$\Delta^{14}C$	^{14}C age (yr)[1]	Calibrated age (yr B.P)[2]
T1"	NZH1			7780±50	8530±120
	NZH3.1			7680±70	8480±120
	NZH3.2	-25	-624.8±2.5	7870±60	8725±275
				average :	**8530±80**
	NZH3.3 (shells)	0	-672.5±3.4	8970±90	9975±275
	NZH2a (bone)	-20	-617.6±2.6	7720±60	8495±105
	NZH2b (bone)	-20	-604.5±2.3	7450±50	8270±110
	NZH2c (bone)	-20	-617.2±2.5	7710±60	8495±105
				average :	**8495 ± 95**

[1] Radiocarbon age using Libby half-life of 5568 years following conventions of *Stuiver and Pollach* (1977).

[2] Calibration according to *Stuiver et al.* (1998) using OxCal v3.4 program. Mean value between lower and upper bound at 2σ confidence level. Average is combined age at 2σ confidence level.

Table A5. ^{14}C ages of shells and charcoal samples at XDW site.

Terrace	Sample	$\delta^{13}C$	Fraction Modern (10^{-2})	$\Delta^{14}C$	^{14}C age (yr)[1]	Calibrated age (yr B.P)[2]
T1'	T60.1	-25	47.57±0.24	-524.3±2.4	5970±40	6802±55
	T60.2	-25	47.99±031	-520.1±3.1	5900±60	6729±63
	T60.3	-25	47.88±0.31	-521.2±3.1	5920±60	6753±47
	T60.4	-25	47.38±0.32	-526.2±3.2	6000±60	6825±66
	T60.5	-25	47.29±0.34	-527.1±3.4	6020±60	6845±74
	T60.6	-25	47.13±0.42	-528.7±4.2	6040±80	6919±76
	T60.7	-25	49.39±0.33	-506.1±3.3	5670±60	6468±65
	T60.7b	-25	48.44±0.33	-515.6±3.3	5820±60	6634±92
						mean: 6748±22
T1"	XTW4	-25	29.07±0.20	-709.3±2.0	9920±60	11100±102
	XTW5	-25	29.44±0.20	-705.6±2.0	9820±60	10994±41
	XTW6	-25	29.40±0.21	-706.0±2.1	9830±60	10998±42
	XTW7	-25	28.88±0.18	-711.2±1.8	9980±60	11116±112
						mean: 11010±27
	XTW8 (bone)	-25	30.67±0.20	-693.3±2.0	9490±60	10477±101
T2	XTW3 (shells)	0	1.00±0.11	-990.1±1.1	37000±900	-

[1] Radiocarbon age using Libby half-life of 5568 years following conventions of *Stuiver and Pollach* (1977).
[2] Calibration according to *Stuiver and Reimer* (1993). Mean value between lower and upper bound.

Table A6. ^{14}C ages of charcoal samples on easternmost site of Maqen segment.

Location	Sample	$\delta^{13}C$	Fraction Modern (10^{-2})	$\Delta^{14}C$	^{14}C age (yr)[1]	Calibrated age (yr B.P)[2]
T3	C2	-25	66.14±0.37	-338.6±3.7	3320 ± 50	3546 ± 77
T3	C3	-25	29.07±0.21	-709.3±2.1	9930 ± 60	11156 ± 157
Moraine	C1				4300 ± 60	4851 ± 20
Moraine	C4	-25	87.41±0.40	-125.9±4.0	1080 ± 40	995 ± 56

[1] Radiocarbon age using Libby half-life of 5568 years following conventions of *Stuiver and Pollach* (1977).
[2] Calibration according to *Stuiver and Reimer* (1993). Mean value between lower and upper bound.

Figure A1. ^{10}Be versus ^{26}Al model ages for samples collected at site 2.

Figure A2. ^{10}Be versus ^{26}Al model ages for samples collected at site 3.

Figure A3. Site XDW. Charcoal collected at base of loess cover just above top pebble layer T1' terrace, north of fault trace, with close-up view of charcoal piece, approximately 1 cm in diameter, dated at 6748 yr BP.

Figure A4. Site XDW. View, towards southwest, of thick conglomeratic fill deposit, of terrace T1" south of fault. Terrace is capped by ≥1 m thick loess layer. Close-up view of charcoal in ancient hearth on top of pebbles and below loess cover, south of fault trace.

Figure A5. Site XDW. View of top section of terrace T2 north of fault on right bank of Xiadawu stream. Snail shells collected in clay deposits about 2-3 m below surface of terrace yield radiocarbon age of 37000 ± 900 yr. These deposits are probably associated to ponding near the fault trace prior to deposition of the 2 m thick conglomerates that cap them.

References

Stuiver, M., and H.A. Polach, 1977. Discussion: reporting of ^{14}C data, *Radiocarbon*, **19**, 355-363.

Stuiver, M., and P.J. Reimer, 1993. Extended ^{14}C data base and revised CALIB 3.0 ^{14}C age calibration program, *Radiocarbon*, **35**, 215-230.

Suiver, M., P.J. Reimer, E. Bard, J.W, Beck, G.S. Burr, K.A. Hughen, B. Kromer, G. McCormac, J. Van der Plicht and M. Spurk, 1998, INTCAL98 radiocarbon age calibration, 24,000-0 cal BP, *Radiocarbon*, 40, 1041-1083.

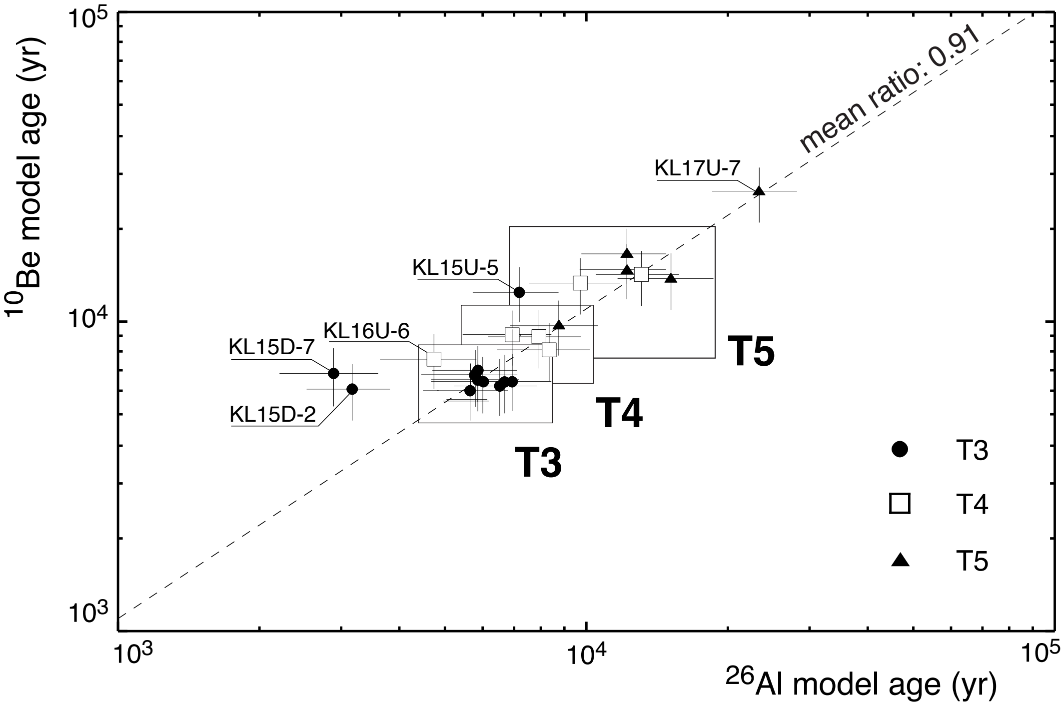

Figure A1. ^{10}Be versus ^{26}Al model ages for samples collected at site 2.

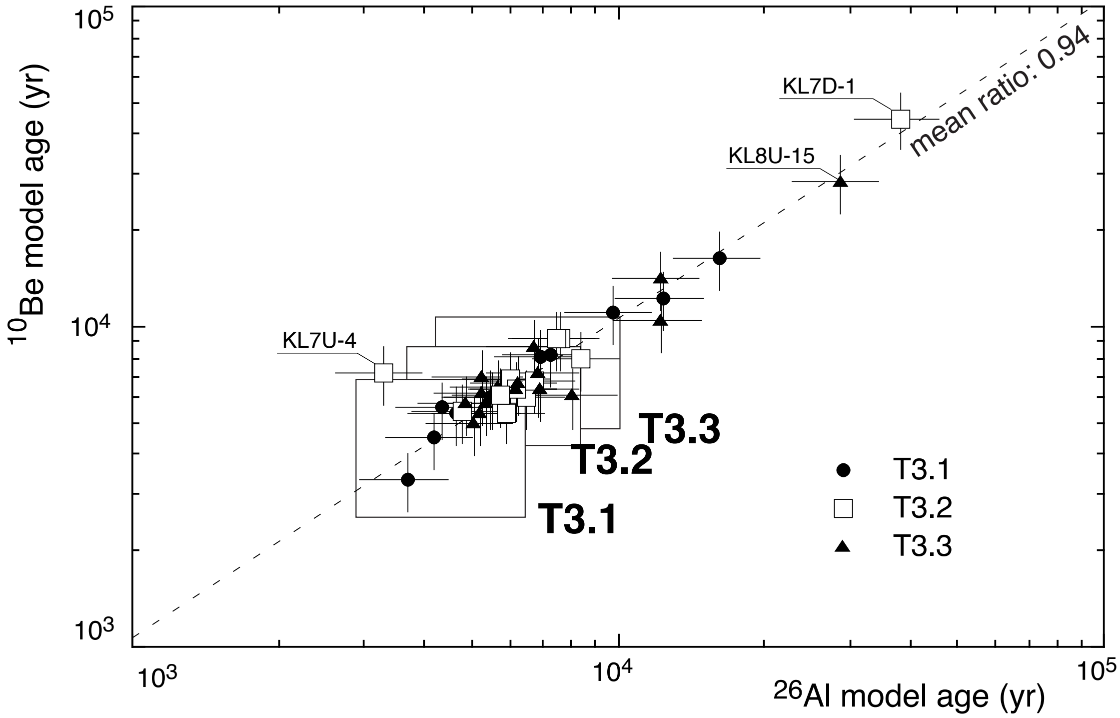

Figure A2. ^{10}Be versus ^{26}Al model ages for samples collected at site 3.

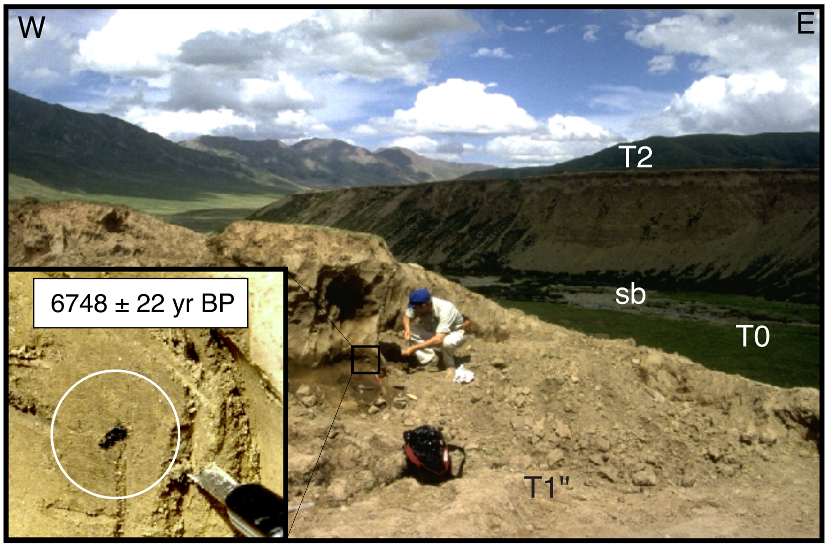

Figure A3. Site XDW. Charcoal collected at base of loess cover just above top pebble layer T1' terrace, north of fault trace, with close-up view of charcoal piece, approximately 1 cm in diameter, dated at 6748 yr BP.

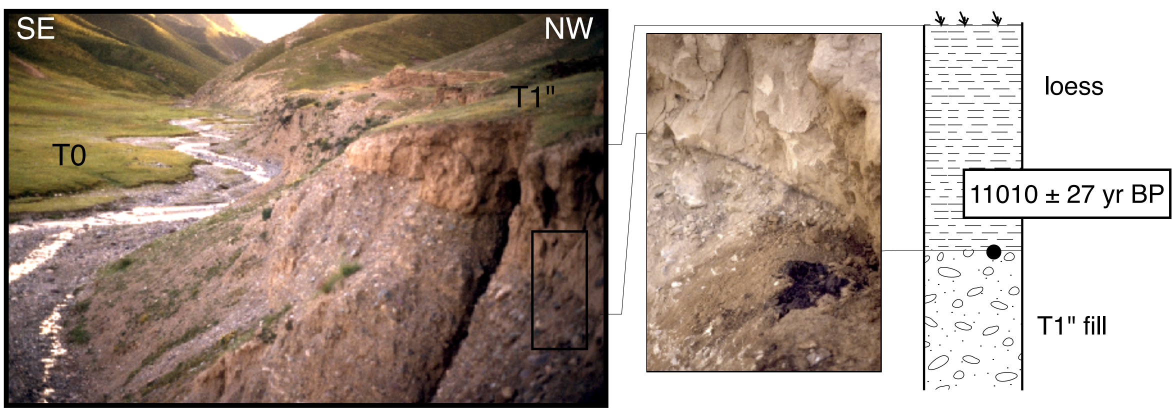

Figure A4. Site XDW. View, towards southwest, of thick conglomeratic fill deposit, of terrace T1" south of fault. Terrace is capped by ≥1 m thick loess layer. Close-up view of charcoal in ancient hearth on top of pebbles and below loess cover, south of fault trace.

Figure A5. Site XDW. View of top section of terrace T2 north of fault on right bank of Xiadawu stream. Snail shells collected in clay deposits about 2-3 m below surface of terrace yield radiocarbon age of 37000 ± 900 yr. These deposits are probably associated to ponding near the fault trace prior to deposition of the 2m thick conglomerates that cap them.

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Appendix B : Geomorphic offsets, tables and figures.

Table B1. Relative heights of terraces at NZH site.

Level	Profile	Heigth (m)
T0'/stream	p21 south of the fault	6.31
	p22 north	5.2
T1/stream	p27 south	30.3
	p28 north	23.8
T1/T0'	p1 north	19.2
	p2 north	19.8
T1/T0"	p1 north	12.1
	p2 north	12.1
T1'/stream	p27 south	35.3
	p28 north	28.1
T1'/T1	p25 south	3.4
	p26 south	3.5
	p4 north	2.4
	p5 north	2.1
	p6 north	1.9
T1"/stream	p27 south	39.8
T1"/T1'	p25 south	1.9
	p26 south	2.9
T2/T0	1:100,000 scale topographic map	~70

Table B2. Horizontal and vertical offsets across Kunlun fault at site NZH.

Terrace	Profile	Horizontal offset (m)	Vertical offset (m)	Ratio
T0'	p9	4.4±0.1	0.4±0.1	
	p10	4.1±0.1	0.4±0.1	
	p11	8.8±0.1	0.7±0.2	
	p12	-	1.1±0.1	
	p13	9.8±0.1	0.4±0.1	
	p14	4.5±0.1	0.4±0.1	
	p15	3.9±0.1	1.1±0.1	
	p16	7.9±0.1	1.0±0.1	
	p17	8.6±0.1	0.8±0.1	
	p18	9.3±0.1	0.9±0.1	
	p19	8.9±0.1	0.7±0.1	
	p20	5.1±0.1	0.8±0.1	
	mean	1 event: 4.4±0.4m	0.4±0.1	11.0±3.7
	mean	2 events: 8.9±0.6m	0.8±0.2	11.1±3.5
T1	p3	-	6.4±0.1	
	p23	-	6.5±0.1	
	p24	57±2	-	
	mean	57±2	6.5±0.1	8.8±0.4
T1'	p29	-	8.5±0.2	
	p24	-	8.5±0.2	
	mean	?	8.5±0.2	?
T1"	p30	-	< 10.2±0.2	
			measured between T"1 south of the fault and T'1 north of it	
		90 ± 10	< 10.2±0.2	< 8.8±1.2

Table B3. Relative heights of terraces at XDW site.

Level	Profile	Heigth (m)
T1/T0	ᴅ1	8.9
	ᴅ2	8.5
	ᴅ3	8.4
T1'/T0	ᴅ3	14
	ᴅ4	14.6
T1'/T1	ᴅ1	4.3
	ᴅ3	3.7
T1''/T0	ᴅ11	18.9
	ᴅ4	16.6
	ᴅ3	16
	ᴅ5	15
T1''/T1	ᴅ1	5.7
	ᴅ3	5.7
T1''/T1'	ᴅ1	1.4
	ᴅ3	2
	ᴅ4	1.9-3.5
	ᴅ11	2.6
T2/T1''	ᴅ1	23.7
	ᴅ3	23.9
	ᴅ4	25.4
	ᴅ13	29.5
	ᴅ11	35.7
	ᴅ15	37.7

Table B4. Offset measurements along the 15km long strand north of Kusai Hu

River	Offset (m)
1	300±20
	620 ± 50
	1000 ± 100
2	190±60
	580 ± 50
	1060 ± 100
3	180±50
	640 ± 50
	1750 ± 100
4	330±100
	1370 ± 100
	2790 ± 100
5	320±100
	1750 ± 100
	2480 ± 100
6	980±150
	1700 ± 150
7	580±150
8	1070±100
	2510 ± 100
9	1130±200
	2590 ± 200
10	60±20
11	230±20
12	300 ± 50
	800 ± 100
13	360±50
14	260±50
	2480 ± 100
15	150±20

Table B5. Geomorphic offsets along Kunlun Fault from Spot images (except at site studied in the field).

	Marker type	Offset (m)	Elevation (m a.s.l.)	Location (°E longitude)
Kusai Hu segment				
1	terrace riser	20±20	4870	91.41
2	stream	200±20	4870	91.41
3	terrace riser	300±20	4870	91.45
	terrace riser	1250±20	4870	91.45
4	small stream	20±20	4870	91.43
5	river	20±20	4700	91.46
6	terrace riser	60±20	4700	91.55
7	terrace riser	20±20	4700	91.65
8	terrace riser	600±20	4700	91.65
9	small stream	20±20	4400	91.83
	small stream	20±20	4400	91.85
10	terrace riser	20±20	4250	92.1
	terrace riser	20±20	4250	92.12
	terrace riser	20±20	4250	92.13
	terrace riser	20±20	4250	92.13
11	terrace riser	25±20	4250	92.13
	terrace riser	60±20	4250	92.13
	stream	60±20	4250	92.13
	stream	60±20	4250	92.14
	stream	60±20	4250	92.14
	stream	60±20	4250	92.15
	stream	60±20	4250	92.15
	stream	60±20	4250	92.15
	stream	60±20	4250	92.15
	stream	60±20	4250	92.16
	stream	60±20	4250	92.16
	stream	60±20	4250	92.17
12	fan edge	80±20	4570	92.28
	stream	110±20	4570	92.28
13	stream	180±20	4570	92.78
	fan edge	600±20	4570	92.78
14	r1	300±20	4870	92.90
		620±50		
		1000±100		
	r2	190±60	4870	92.90
		580±50		
		1060±100		
	r3	180±50	4870	92.91
		640±50		
		1750±100		
	r4	330±100	4870	92.91
		1370±100		
		2790±100		
	r5	320±100	4870	92.92
		1750±100		
		2480±100		
	r6	980±150	4870	92.93
		1700±150		
	r7	580±150	4870	92.94
	r8	1070±100	4870	92.95
		2510±100		
	r9	1130±200	4870	92.98
		2590±200		
	r10	60±20	4870	93.00
	r11	230±20	4870	93.00
	r12	300±50	4870	93.00
		800±100		
	r13	360±50	4870	93.00
	r14	260±50	4870	93.02
		2480±20		
	r15	150±20	4870	93.04
15	terrace riser	20±20	4870	93.16
16	terrace riser	100±20		
17	small stream	125±20	4870	93.2
	small stream	125±20		
18	river	1250±20	5030	93.42
19	small stream	350±20	5030	93.53
	small stream	350±20		
20	river	850±20	5030	93.58
21	terrace riser	250±20	5030	93.62
	terrace riser	250±20		
22	stream	300±20	5030	93.63
23	small stream	300±20	5030	93.65
24	stream	200±20	5030	93.665
25	small stream	200±20		93.69
26	small stream	300±20		93.72
27	small stream	200±20		93.73
28	small stream	100±20		93.74
29	small stream	80±20		93.75
30	small stream	80±20		93.76
31	small stream	90±20	5000	93.78
	small stream	90±20		
	small stream	90±20		

(*Table B5 continued*)

	Marker type	**Offset (m)**	**Elevation (m a.s.l.)**	**Location (°E longitude)**		**Marker type**	**Offset (m)**	**Elevation (m a.s.l.)**	**Location (°E longitude)**
<u>Xidatan-Dongdatan segmen</u>									
1	channel	39	4440	94.13	17	stream	100±20	3770	94.80
	terrace riser	18				stream	100±20		
	channel	27				stream	100±20		
	terrace riser	9.5				tream	100±20		
	stream	12.5			18	terrace riser	100±20	3800	94.81
2	terrace riser	29 ± 3	4440	94.14		terrace riser	150±20		
3	fan edge	76±5	4440	94.15	19	fan edge	25	3960	94.88
4	fan edge	26		94.17	20	stream	35	3990	94.91
5	stream	58,5±5	4400	94.19	21	terrace riser	18	3990	95.16
	stream	50±5				terrace riser	65±5		
6	terrace edge	9	4400	94.23	22	stream	100±20	3960	95.16
7	stream	9±0,5	4380	94.24	23	stream	100±20	3960	95.16
						stream	100±20		95.16
	terrace riser	23±2				stream	100±20		95.16
	terrace riser	10,2±1				stream	100±20		95.17
8 (site 2)	terrace riser	110±10	4340	94.26		stream	100±20		95.17
	terrace riser	70±5				stream	100±20		95.17
9	terrace riser	9	4250	94.33		stream	100±20		95.17
10	stream	29±1,5	4250	94.35		stream	100±20		95.17
11 (site 1)	terrace riser	24±3	4250	94.39		stream	100±20		95.18
	terrace riser	33±4				stream	100±20		95.18
	gully	50				stream	100±20		95.18
12	stream	60	4320	94.44	24	gully	20±20	4000	95.43
	stream	60				gully	20±20		
	gully	50				stream	100±20		
13	fan edge	30	4160	94.54		stream	100±20		95.43
	terrace riser	30				stream	100±20		
14	fan edge	75±25	4070	94.58	25	terrace riser	60±20	4250	95.57
15	stream	25	3740	94.62	26	small stream	25±20	4250	94.73
	stream	25				terrace riser	90±20		94.73
16 (site 3)	terrace riser	68±5	3730	94.71		terrace riser	90±20		94.73
	terrace riser	47±5				fan edge	> 500±20		95.76
<u>Alag Hu segment</u>									
1	terrace riser	70-20/+70	4260	95.93	9	terrace riser	100±20	4500	96.8
2	small streams	20±20	4500	95.98	10	terrace riser	75±20	3950	97.47
	small streams	20±20			11	terrace riser	40±20	3950	97.48
	small streams	20±20			12	stream	50±20	3950	97.49
	small streams	20±20			13	stream	80±20	3950	97.56
3	terrace riser	220±20	4700	96.07	14	terrace riser	30±20	3950	97.68
4	terrace riser	30±20	4260	96.40	15	terrace riser	200±20	3950	97.69
5	terrace riser	250±20	4260	96.42	16	terrace riser	25±20	3950	97.70
	terrace riser	400±20		96.42		stream	130±20		
6	terrace riser	70±20	4260	96.49	17	terrace riser	25±20	3950	97.71
	terrace riser	70±20			18	stream	20±20	3950	97.73
7	terrace riser	80±20	4500	96.70	19	stream	25±20	3950	97.77
8	fan edge	120±20	4500	96.71		terrace riser	25±20		

(*Table B5 continued*)

	Marker type	Offset (m)	Elevation (m a.s.l.)	Location (°E longitude)
Dongxi segment				
1	stream	40±20	4100	98.01
	stream	40±20		
	stream	40±20		
2	stream	20±20	4100	98.03
	stream	40±20		
3	stream	20±20	4100	98.04
4	fan edge	80±20	4100	98.05
	fan edge	80±20		
5	stream	30±20	4200	98.10
	stream	30±20		
	stream	30±20		
6	stream	60±20	4200	98.10
	stream	60±20		
	stream	60±20		
7	stream	40±20	4100	98.21
8	stream	20±20	4100	98.23
9	stream	40±20	4100	98.25
	stream	40±20		
	stream	30±20	4100	98.15
	stream	30±20		
10	lake shore	90±20	4100	98.36
11	stream	25±20	4200	98.87
	stream	40±20		
	stream	40±20		
	stream	50±20		
	stream	40±20		
	stream	50±20		98.88
	stream	60±20		
	stream	40±20		
	stream	40±20		
	stream	100±20		98.89
	stream	80±20		
	stream	100±20		
	stream	25±20		
	stream	30±20		
	stream	20±20		98.90
	stream	70±20		
	sream	40±20		
	stream	40±20		
	stream	40±20		98.91
	stream	20±20		
	stream	25±20		
	stream	25±20		
	stream	15±20		98.92
12	stream	200±20	4200	98.98
	stream	40±20		
	stream	50±20		98.99
	stream	50±20		
	terrace riser	170±20		99.00
	stream	110±20		
	stream	160±20		99.01
	stream	90±20		
	stream	180±20		99.02
	terrace riser	220±20		
	stream	50±20		99.03
	fan apex	60±20		
	gully	20±20		99.04
	gully	20±20		
	fan apex	60±20		99.05
	fan apex	60±20		99.06
	fan apex	60±20		99.07
13 (site	terrace riser	55±10	4000	99.11
	terrace riser	8±1m		
	terrace riser	4±0,5m		
14	terrace riser	320±20	4000	99.18
	terrace riser	60±20		
	terrace riser	60±20		
	terrace riser	400±20		
15 (site	terrace riser	400±10	4000	99.26
	terrace riser	120±5		
	terrace riser	60±5		
	terrace riser	400±20		
16	terrace riser	30±20	4000	99.35
	terrace riser	110±20		
	terrace riser	150±20		
17	stream	200±20	4200	99.38
	stream	200±20		
	stream	200±20		

(*Table B5 continued*)

	Marker type	Offset (m)	Elevation (m a.s.l.)	Location (°E longitude)
Magen segment				
1	stream	4100±100	3650	99.66
2	stream	200±20	3650	99.72
3	stream	280±20	3650	99.75
	stream	60±20		
	stream	280±20		
4	stream	250±20	3650	99.76
	stream	170±20		
5	stream	250±20	3250	99.77
6	stream	12800±500	3200	99.91
7	stream	60±20	3650	100.01
	stream	60±20		
	stream	60±20		
	stream	60±20		
8	stream	9600±500	3650	100.25
9	terrace riser	80±20	3900	100.33
	terrace riser	30±20		
	terrace riser	50±20		
	terrace riser	80±20	3900	100.37
	terrace riser	80±20		
	terrace riser	40±20	3900	100.41
	terrace riser	100±20		
	terrace riser	80±20		
	terrace riser	130±20		
	terace riser	40±20	3900	100.47
	terrace riser	40±20		
	moraine	180±20	3900	100.48
	glacial valley	700±20	3900	100.49
	glacial valley	410±20		
10	terrace riser	40±20	3600	100.60
	terrace riser	40±20		
	stream	750±20		100.63
	stream	930±200		
		2000±100		100.65
		4500±100		
	stream	4500±100		100.68
11	stream	85 km	3000	100.83
12	terrace riser	50±20	3200	101.22
13	terrace riser	130±20	3200	101.40
	small stream	50±20		
	small stream	120±20		
14	terrace riser	40±20	3200	101.43
	terrace riser	40±20		

Figure B1. Site XDW. Best fit between blocks offset by fault adjusting terrace risers T1/T0 and T2/T1. White arrows point to matching terrace risers.

Figure B2. Site 6. (a) SPOT image enlargement of easternmost strand of Maqen segment of Kunlun Fault. (b) Geomorphic interpretation. Terrace abandoned after glacial retreat, dated at 11156 ± 158 yr BP, defines lower bound of age of 180 m offset of lateral moraine. This moraine probably formed during Last Glacial Maximum (LGM~20ka)(see text).

Figure B3. Examples of geomorphic offsets along Kusai segment. (a) Enlargement of SPOT image KJ233-278. Loess covered fan is incised by several channels offset left-laterally 60 m by fault. (b) Most channel offsets are cancelled by sliding 60 m westward southern half of image. (c) Enlargement of box on Figure 44a. High terrace riser is offset 25 m. (d) Old terrace surface deeply incised by rills on east side of large river. Largest rill is offset about 80 m. Large riser east of river is offset about 110 m.

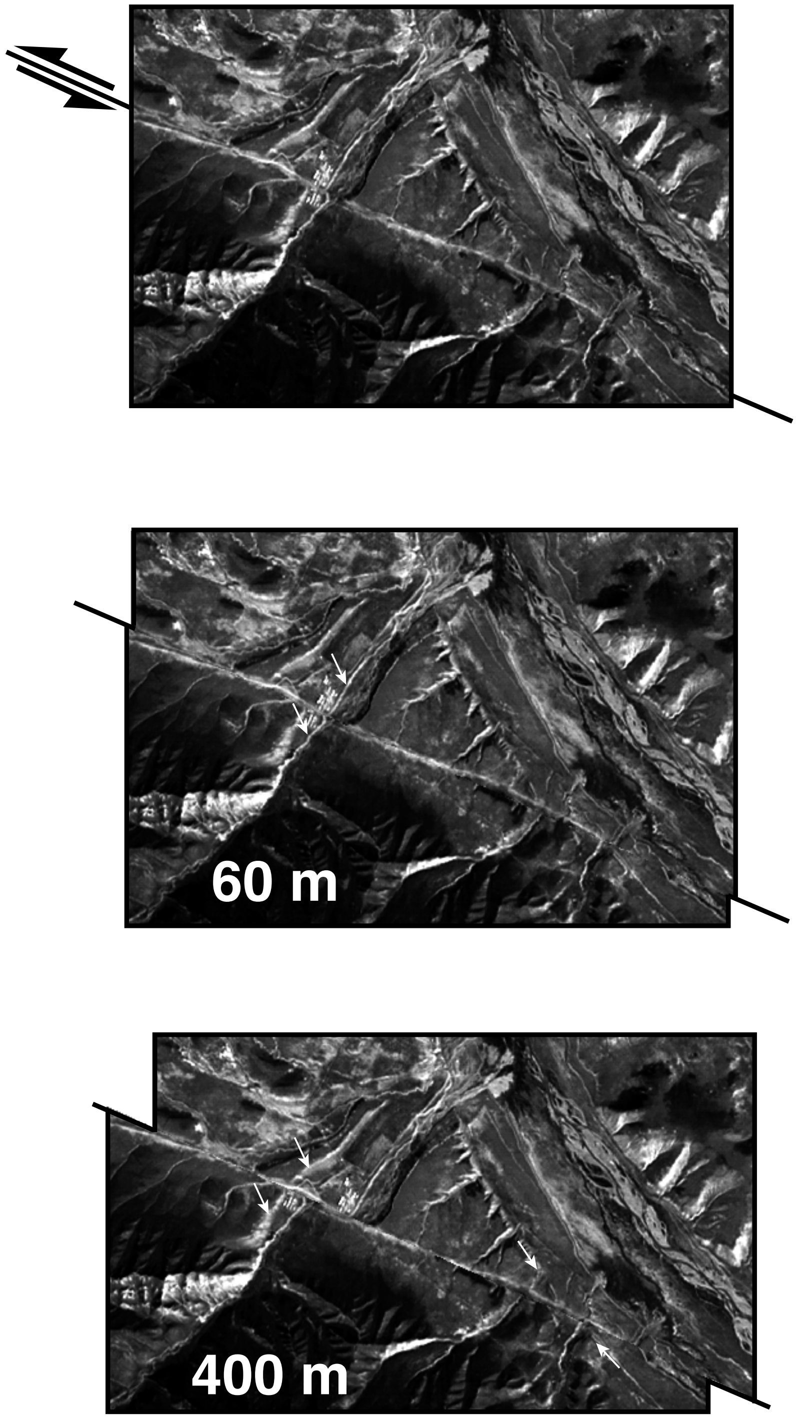

Figure B1. Site XDW. Best fit between blocks offset by fault adjusting terrace risers T1/T0 and T2/T1. White arrows point to matching terrace risers.

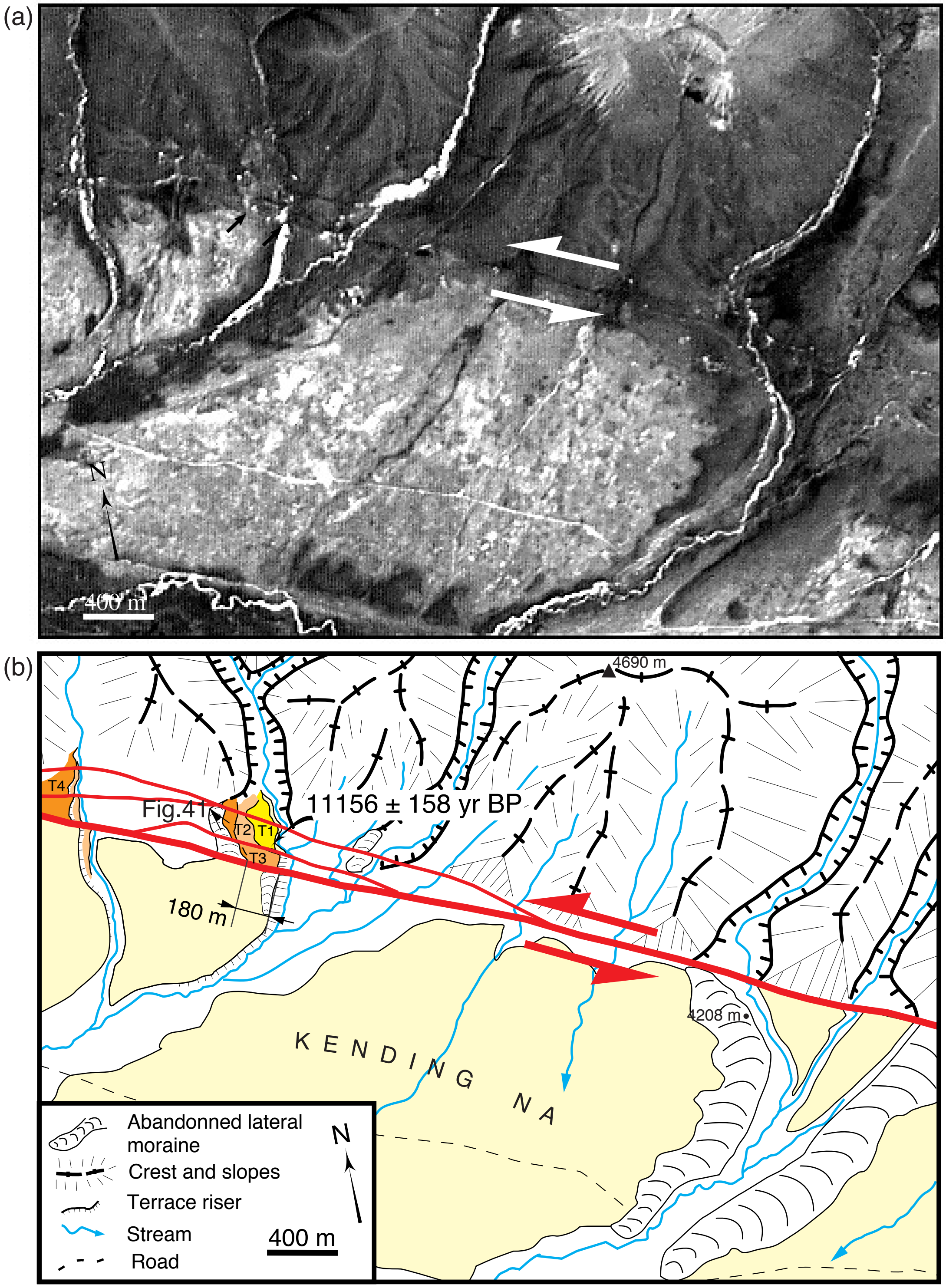

Figure B2. Site 6. (a) SPOT image enlargement of easternmost strand of Maqen segment of Kunlun Fault. (b) Geomorphic interpretation. Terrace abandoned after glacial retreat, dated at 11156 ± 158 yr BP, defines lower bound of age of 180 m offset of lateral moraine. This moraine probably formed during Last Glacial Maximum (LGM~20ka)(see text).

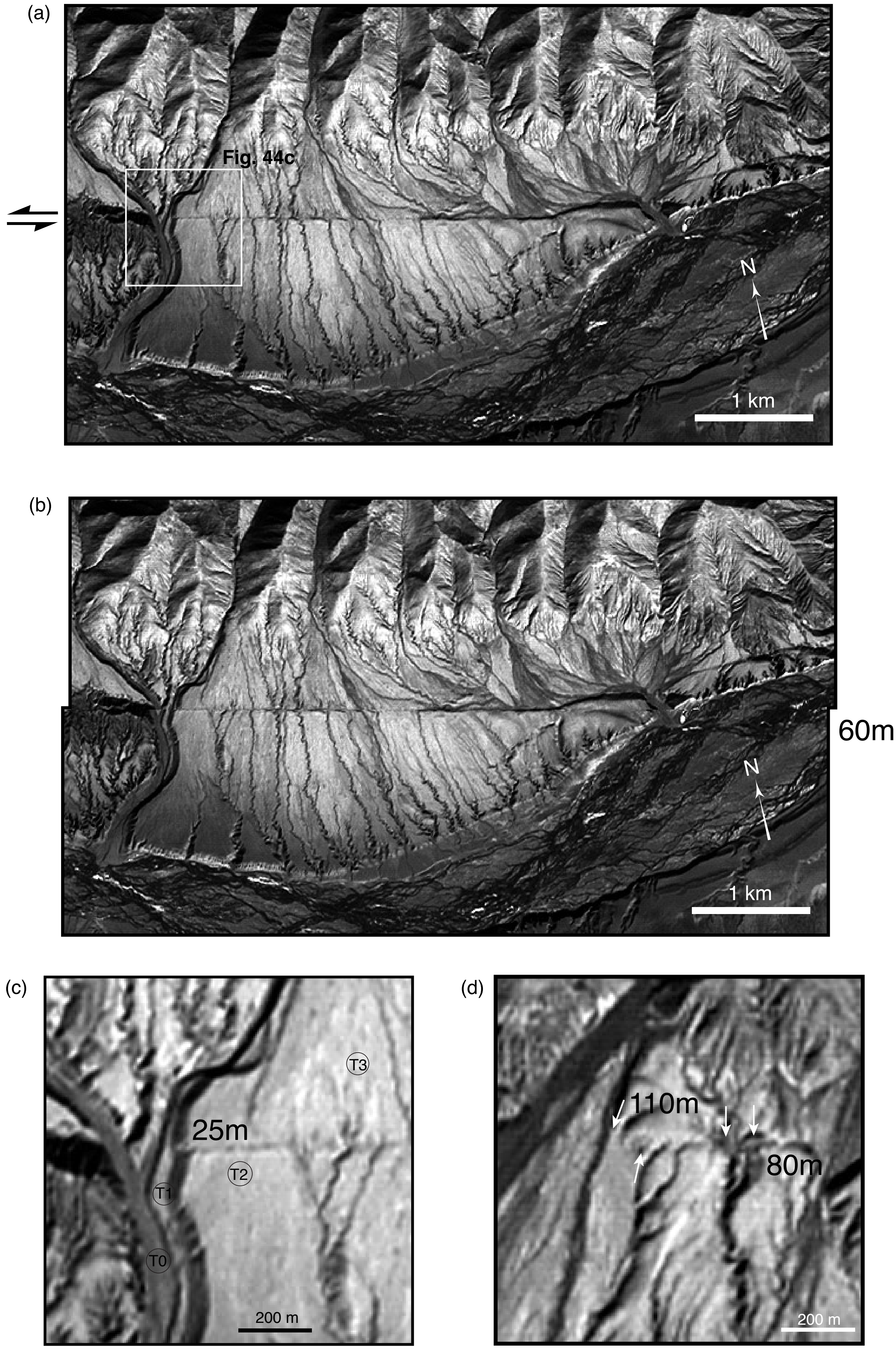

Figure B3. Examples of geomorphic offsets along Kusai segment of Kunlun Fault.(a) Enlargement of SPOT image KJ233-278. Loess covered fan is incised by several channels offset left-laterally 60 m by fault. (b) Most channel offsets are cancelled by sliding 60 m westward southern half of image. (c) Enlargement of box on Fig. B3a. High terrace riser is offset ~25 m. (d) Old terrace surface deeply incised by rills on east side of large river. Largest rill (arrows) is offset about 80 m. Large riser east of river (arrows) is offset about 110 m.

Geophysical Journal International 2002, 147: 356-388.
Supplementary material to Van Der Woerd J., P. Tapponnier, F.J. Ryerson, A.S. Mériaux, B. Meyer, Y. Gaudemer, R. Finkel, M. Caffee, Zhao G., Xu Z., Uniform Post-Glacial slip-rate along the central 600 Km of the Kunlun Fault (Tibet), from ^{26}Al, ^{10}Be, and ^{14}C dating of riser offsets, and climatic origin of the regional morphology, *Geophysical Journal International*, 147, 356-388, 2002.

Appendix C : Field pictures

Figure C1. Dongxi segment. View towards north of active southern Anyemaqen thrust trace (arrows).

Figure C2. Dongxi segment. View, towards south, of Kunlun Fault offsetting and beheading alluvial fans. Fanhead offset is approximately 30 m.

Figure C3. Site NZH. View - towards west, from T1" terrace - of alluvial terraces deposited and abandoned by Nianzha He. Note particularly thick deposit of terrace T2 more than 50 m above stream bed.

Figure C4. Site NZH. View - towards west, along fault trace, from T1 terrace - of left-lateral offsets of T1'/T1 terrace riser (black arrows) and T1"'/T1" riser (gray arrows). White arrows follow fault trace. Note vertical offset of terraces.

Figure C1. Dongxi segment. View towards north of active southern Anyemaqen thrust trace (arrows).

Figure C2. Dongxi segment. View, towards south, of Kunlun Fault offsetting and beheading alluvial fans. Fanhead offset is approximately 30 m.

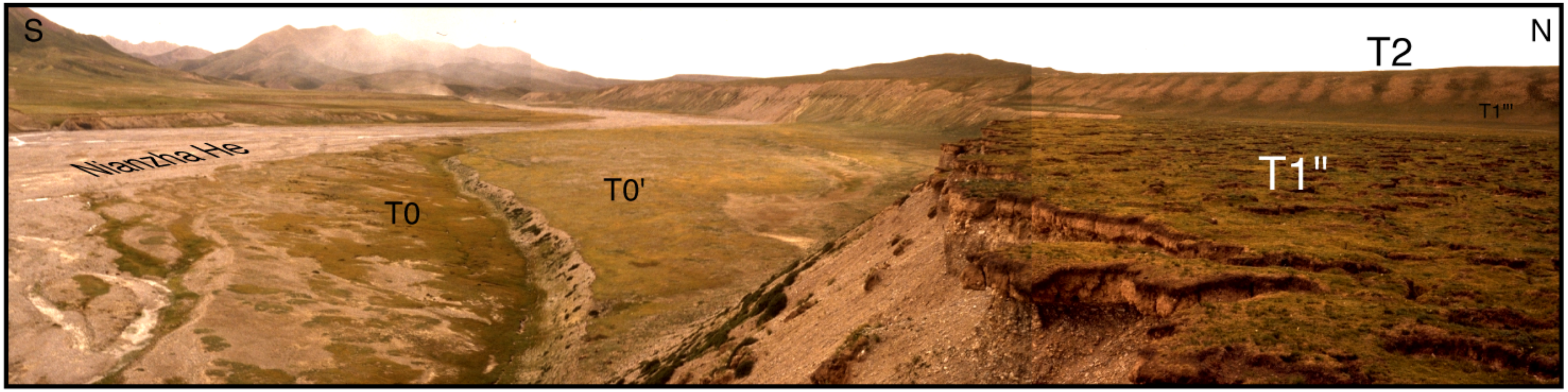

Figure C3. Site NZH. View - towards west, from T1" terrace - of alluvial terraces deposited and abandoned by Nianzha He. Note particulalrly thick deposit of terrace T2 more than 50 m above stream bed.

Figure C4. Site NZH. View - towards west, along fault trace, from T1 terrace - of left-lateral offsets of T1'/T1 terrace riser (black arrows) and T1'''/T1" riser (grey arrows). White arrows follow fault trace. Note vertical offset of terraces.