

AD-A062 100

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND ABERD--ETC F/6 20/5  
IR SCANNING CAMERA DATA FOR USN-UTRC ACRYLIC TESTS AT 3.8 MICRO--ETC(U)  
AUG 78 J E KAMMERER, S A DUNBAR, M T REEDY

UNCLASSIFIED

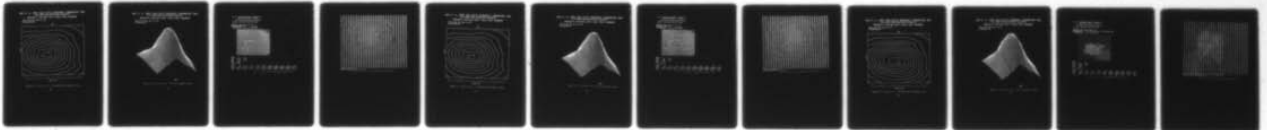
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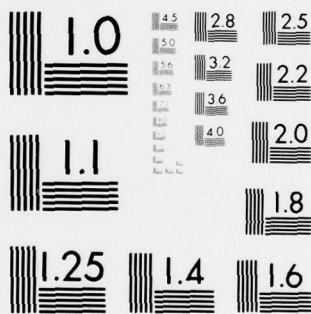
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2 OF 2

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3-79  
DDC



MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\*  
HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

PROJECT: UNIFIED NAVY FIELD TEST PROGRAM

UTRC 17.67, DX=.105, DY=.170  
NO OBVIOUS SAT.

TOP

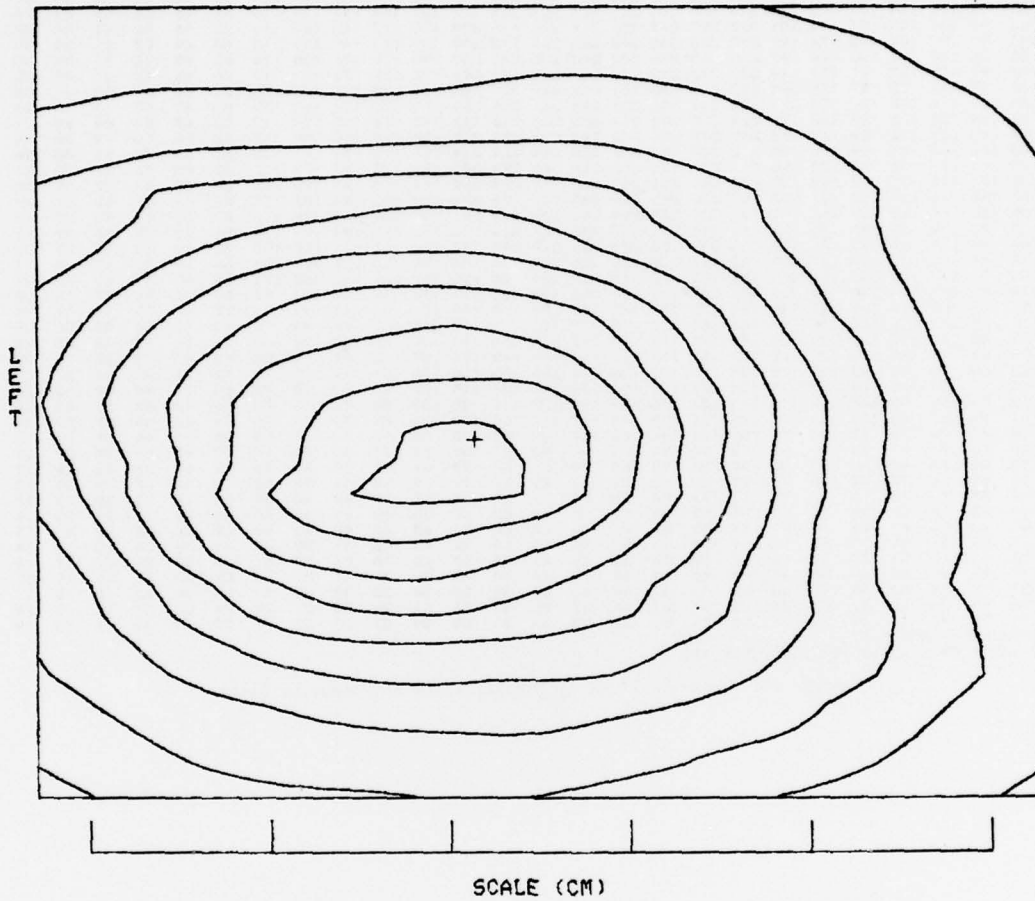
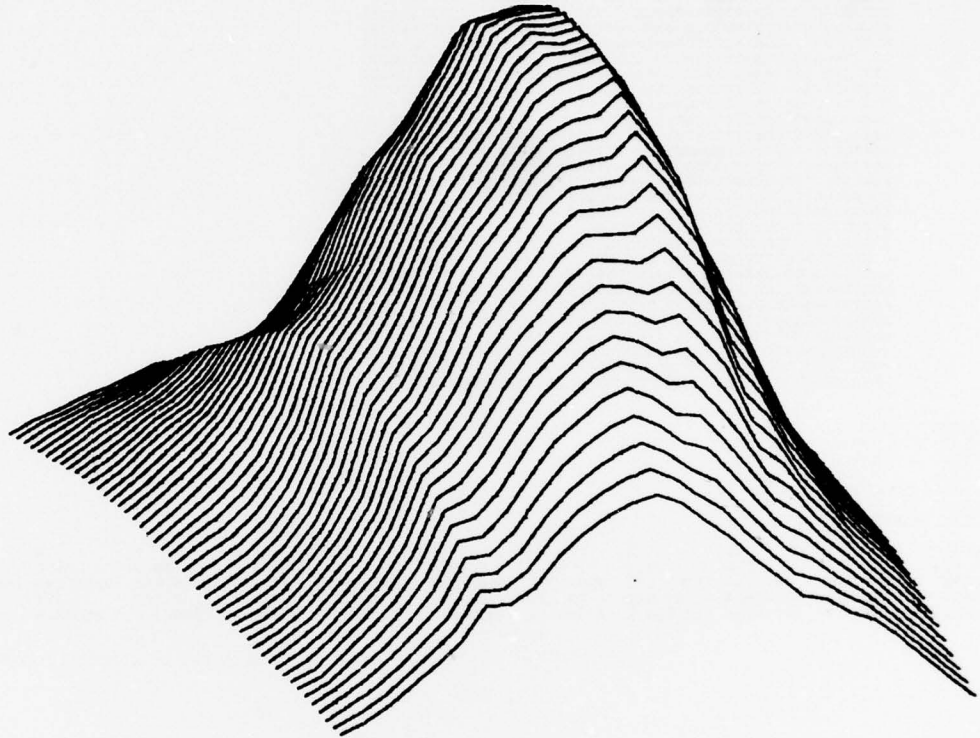


Figure 23C. Test Run 17.67 -- 2D Contour Map of Composite Frame

\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\*  
HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

PROJECT: UNIFIED NAVY FIELD TEST PROGRAM

UTRC 17.67, DX-.105, DY-.170  
NO OBVIOUS SAT.



LEFT

Figure 23D. Test Run 17.67 -- 3D Plot of Composite Frame



41	48	56	64	69	72	75	76	84	91	100	105	112	116	112	108	102	95	83	78	77	64	55	46	39	33	28
44	51	59	67	73	76	80	81	90	98	108	112	119	124	119	118	108	100	87	82	80	66	56	47	40	34	28
47	53	61	69	76	81	86	87	98	106	117	120	127	132	127	121	118	105	91	86	84	68	58	48	41	34	28
49	57	64	73	80	85	92	94	106	118	127	129	136	141	138	128	120	110	96	91	88	71	59	50	42	34	29
52	60	68	76	84	91	98	102	115	125	137	138	145	149	143	138	127	116	102	96	92	74	61	51	43	34	29
55	63	72	80	88	96	100	110	120	136	148	147	153	157	151	142	135	121	108	100	96	76	63	53	44	35	30
58	67	75	83	93	101	111	117	136	146	159	156	162	165	159	149	139	127	114	104	99	78	64	53	44	35	30
61	70	79	86	96	106	117	125	146	157	170	166	170	173	166	156	145	133	118	108	101	79	65	54	44	36	30
64	72	82	89	100	110	123	132	156	168	181	175	178	181	174	162	151	138	123	112	103	80	66	54	44	36	30
66	75	84	91	103	115	129	140	165	178	191	184	187	189	181	168	157	144	127	118	105	81	66	54	44	36	30
68	77	87	94	106	119	135	146	174	188	201	194	195	198	189	174	162	149	131	117	106	82	66	55	44	36	30
70	78	89	96	109	124	141	153	182	197	211	203	203	207	197	180	167	154	134	119	108	83	67	55	44	36	30
71	80	91	98	112	128	147	160	190	206	220	213	211	215	203	185	173	159	138	122	110	83	67	55	44	36	30
71	83	95	102	116	132	153	166	196	214	229	222	219	223	209	190	178	163	142	124	111	84	67	55	44	36	29
72	83	96	104	121	138	157	171	201	221	235	230	228	228	214	198	182	167	145	125	113	84	68	54	43	36	29
72	84	97	106	124	140	163	181	208	229	246	242	238	235	214	198	185	170	147	127	115	85	68	54	43	36	29
73	84	97	107	126	142	165	185	210	231	249	246	243	238	219	204	191	175	149	129	117	86	67	53	43	35	29
73	84	97	109	127	143	167	189	212	232	252	248	247	239	222	206	194	176	151	133	120	85	68	53	43	35	29
74	84	97	110	128	144	169	191	213	234	254	249	251	241	224	208	197	177	152	134	121	89	68	53	43	35	30
75	84	97	111	129	145	170	192	214	235	255	249	253	243	228	210	198	178	153	136	122	90	69	54	43	36	30
76	85	97	111	129	146	171	192	214	235	254	250	254	244	226	211	198	178	154	137	122	91	70	55	44	37	30
76	85	98	112	129	146	171	190	213	235	253	250	254	244	226	212	197	178	154	138	122	91	70	55	45	38	30
77	85	98	112	129	146	171	188	211	234	252	251	252	244	226	211	196	177	155	137	122	91	71	56	46	39	31
76	85	99	113	128	145	169	185	208	232	250	250	249	243	224	209	194	176	154	136	122	91	71	57	47	39	32
76	85	99	113	127	145	167	182	204	229	247	248	245	241	223	207	191	174	152	134	121	91	71	58	48	40	31
75	85	98	112	127	144	164	179	200	225	243	245	240	238	220	203	188	171	148	132	119	91	72	59	48	40	31
74	84	97	111	127	142	161	176	196	219	237	241	235	232	216	198	184	168	144	129	118	91	72	60	49	39	31
73	83	96	110	127	140	159	172	192	212	230	235	228	224	210	192	181	164	139	125	115	90	72	60	49	39	31
72	82	94	108	126	139	157	167	186	205	222	227	222	215	202	185	176	159	135	121	112	89	72	59	49	39	31
71	80	92	105	124	136	154	162	180	196	212	216	213	204	192	178	170	153	130	117	109	88	71	59	49	39	31
69	79	90	103	122	133	151	157	174	188	202	204	203	193	181	170	163	146	125	112	105	86	70	58	48	39	31
66	77	87	101	119	129	147	151	166	179	191	190	191	182	170	162	156	139	119	107	101	83	68	57	48	38	30
64	75	85	98	116	126	142	145	158	171	179	177	178	171	161	155	148	133	114	102	97	80	66	56	47	37	29
61	72	82	96	112	122	136	139	150	163	168	165	166	162	153	146	139	126	107	96	92	76	64	55	46	37	29
58	69	80	93	109	117	129	133	141	155	158	154	155	153	145	137	131	120	101	91	88	73	62	54	44	36	28
55	67	78	90	104	113	122	127	132	145	148	144	145	145	138	128	123	112	95	86	84	70	60	52	43	35	27
53	64	75	87	100	107	116	120	124	135	138	135	137	136	130	119	115	104	89	82	80	67	57	50	42	34	26
50	61	73	83	95	103	110	113	116	124	128	125	129	127	121	111	106	96	83	78	77	64	55	48	41	33	26
48	59	70	79	91	98	105	106	108	114	118	116	120	118	113	103	97	89	78	73	73	61	53	46	39	31	25
46	56	67	75	87	93	99	99	101	104	108	106	111	108	104	96	89	81	73	69	69	58	50	43	38	30	24
44	53	64	71	82	89	94	93	93	95	99	97	101	99	95	88	81	75	68	64	65	55	48	41	36	29	22
41	51	60	66	78	84	88	86	85	87	91	88	92	90	87	81	74	68	63	59	60	52	45	39	34	28	21
39	48	57	62	74	80	82	79	78	79	83	81	84	82	79	74	67	63	59	55	56	49	42	37	32	27	20
36	45	53	58	69	74	76	72	71	73	76	74	76	74	72	67	61	57	54	51	52	45	40	35	30	25	19
34	42	49	54	65	69	70	65	64	66	69	68	69	68	65	60	56	53	49	47	48	42	37	33	28	24	18
32	39	45	51	60	63	64	58	58	61	62	62	62	61	58	54	50	48	45	44	44	39	35	31	27	22	17
30	36	42	47	56	58	59	52	53	55	56	56	55	52	48	46	44	41	40	41	36	33	29	25	20	15	
28	33	39	44	52	53	53	47	48	50	51	51	51	49	46	44	41	40	38	37	38	33	31	27	23	18	14
26	30	36	40	48	48	47	42	43	44	46	45	46	44	42	39	37	34	34	35	31	29	25	21	17	13	
24	28	33	37	43	44	42	38	39	40	41	40	41	40	37	36	34	33	32	32	32	29	27	23	20	16	12
22	25	30	34	39	40	37	35	35	36	37	36	37	36	34	32	31	31	29	29	30	28	26	22	18	15	11
20	23	27	31	36	36	33	31	31	33	33	32	34	33	30	29	29	28	27	27	28	26	24	21	17	14	10
18	22	25	28	32	32	29	28	28	30	30	29	30	30	28	27	26	26	24	25	26	24	22	19	15	12	9

COMMENTS: NO OBVIOUS SAT.

UNFTP TEST: UTRC 17.68, DX=.105, DY=.170

Figure 24B. Test Run 17.68 -- Normalization of Composite Frame

\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\*  
HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

PROJECT: UNIFIED NAVY FIELD TEST PROGRAM

UTRC 17.68, DX=-.105, DY=.170  
NO OBVIOUS SAT.

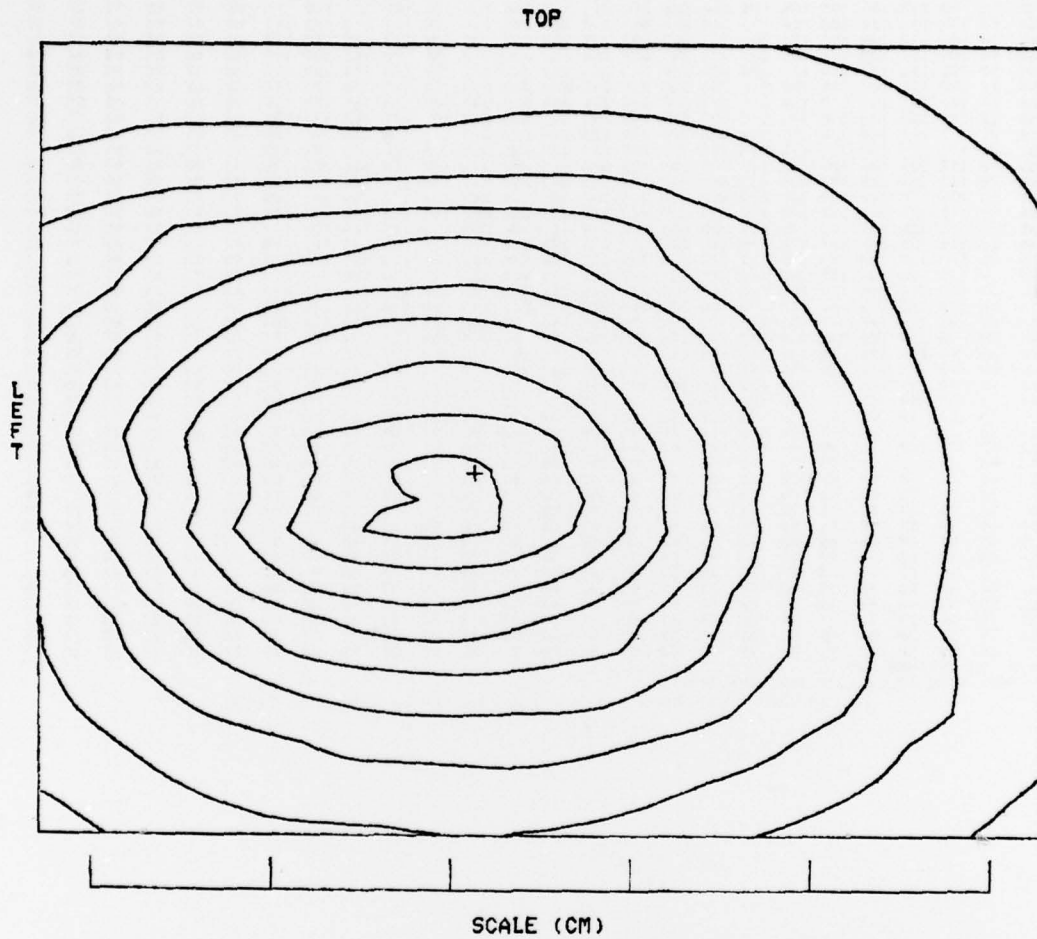
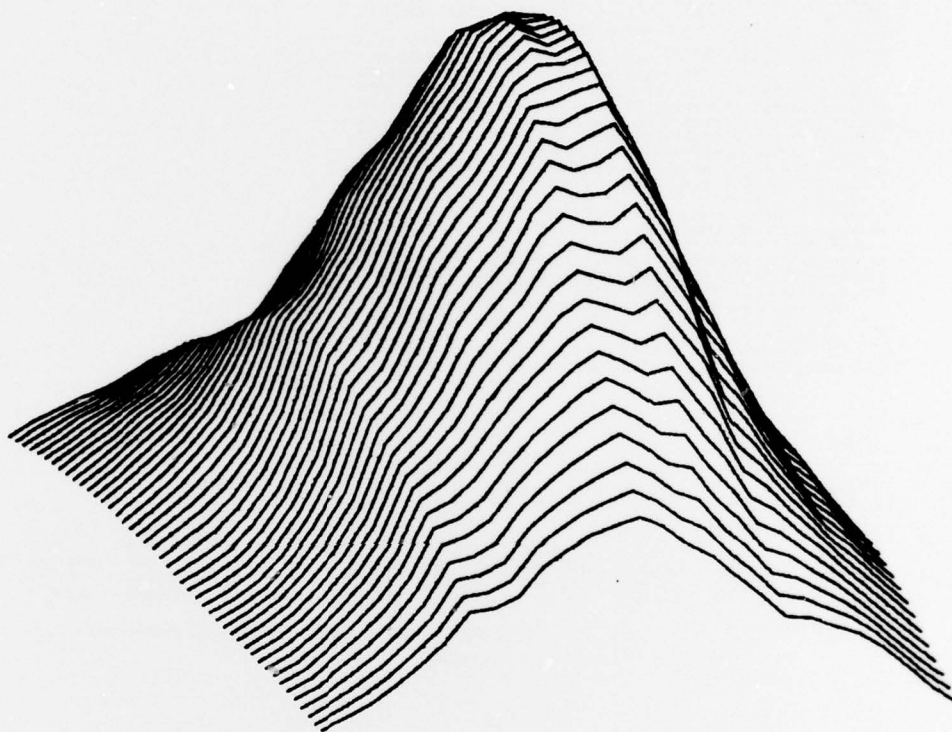


Figure 24C. Test Run 17.68 -- 2D Contour Map of Composite Frame

**\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\***  
HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

**PROJECT: UNIFIED NAVY FIELD TEST PROGRAM**

UTRC 17.68, DX=.105, DY=.170  
NO OBVIOUS SAT.



**LEFT**

Figure 24 D. Test Run 17.68 -- 3D Plot of Composite Frame



46	54	61	70	78	81	83	85	94	103	111	116	126	130	127	123	115	103	85	77	76	62	54	46	40	34	30
49	57	65	73	80	85	88	91	101	110	120	123	133	138	134	129	120	106	89	81	79	64	55	47	40	35	30
52	59	67	75	83	88	93	93	108	118	129	131	142	146	141	134	125	110	92	85	82	66	57	48	41	35	30
54	61	68	76	84	92	98	104	116	126	139	140	150	155	149	141	131	115	97	89	86	68	59	50	43	36	31
57	63	71	81	90	97	104	111	124	135	149	149	159	163	157	148	138	120	108	94	90	70	61	53	44	37	31
59	67	74	84	94	102	111	118	133	145	159	158	168	172	165	155	144	126	109	94	78	63	55	46	39	33	
62	71	78	88	98	107	117	123	142	156	169	167	177	181	172	162	150	133	115	103	98	76	64	56	46	39	33
64	74	82	92	102	111	123	132	150	166	179	177	185	188	179	169	156	139	121	107	101	78	66	57	47	39	33
67	77	86	95	105	116	129	138	159	176	189	185	193	195	185	175	161	145	125	111	103	80	67	57	48	40	34
70	79	89	98	108	119	134	143	168	183	198	194	200	203	191	180	166	151	139	114	105	82	68	58	49	40	34
73	81	92	100	111	123	139	151	177	194	207	203	208	210	197	186	172	156	134	117	108	83	69	59	49	41	34
75	83	94	101	113	127	145	157	186	201	215	212	216	217	204	193	178	162	138	121	111	84	70	59	50	41	35
76	85	95	103	115	131	150	163	193	208	223	221	223	223	212	199	184	167	142	124	114	86	70	60	50	41	34
77	87	97	105	118	135	155	169	200	214	229	228	229	229	218	205	190	172	147	127	116	88	71	60	49	41	34
77	88	99	107	121	138	160	173	205	220	235	235	235	234	224	211	196	176	151	130	119	89	72	60	48	41	34
77	89	101	109	123	141	163	180	209	224	239	239	240	239	229	216	201	181	155	133	121	91	73	60	48	41	34
77	89	102	111	125	143	167	185	211	227	243	244	244	243	232	221	207	185	159	136	124	92	73	59	46	40	35
77	89	103	112	127	144	169	190	213	230	246	247	248	247	235	225	211	189	162	139	126	94	72	58	46	40	35
77	89	103	112	127	144	169	190	213	230	246	247	248	247	235	225	211	189	162	139	126	94	72	58	46	40	35
77	89	104	114	129	145	171	193	214	231	248	250	250	249	236	228	214	192	165	142	129	95	72	58	46	40	35
77	89	104	116	130	147	173	196	215	233	250	252	252	251	238	232	217	196	168	146	131	96	72	57	46	40	35
78	89	104	117	132	148	175	198	216	234	251	252	253	253	238	234	218	198	171	148	132	97	72	57	46	40	35
78	89	104	119	133	150	177	198	217	236	252	252	254	253	238	237	219	199	173	151	133	98	73	59	49	38	32
79	90	105	120	134	151	178	198	217	236	254	252	254	254	239	235	219	200	174	152	134	99	74	59	50	39	32
80	91	106	121	134	153	179	197	217	236	254	252	254	254	239	235	219	201	175	152	134	99	74	59	50	39	32
80	92	107	121	135	153	179	196	216	235	254	251	254	254	239	233	218	200	174	152	134	99	73	58	50	40	31
81	93	107	122	136	154	178	195	216	234	254	250	254	254	239	229	216	199	173	152	134	99	73	58	50	40	31
81	94	107	123	137	154	178	194	215	233	254	249	253	253	238	225	214	197	171	150	133	99	76	62	49	40	32
81	93	107	123	138	154	178	193	214	232	252	247	251	250	235	221	211	193	167	148	131	99	76	62	49	41	32
80	93	106	124	139	154	175	191	212	229	249	244	248	245	231	217	200	188	163	145	129	99	76	62	50	41	32
79	92	106	124	140	154	175	188	209	226	244	241	244	239	224	212	204	183	158	141	127	98	76	63	50	41	32
77	91	105	123	140	153	174	185	206	222	239	236	239	231	216	206	198	176	152	135	124	97	76	63	51	41	31
76	91	104	121	140	152	174	182	202	217	232	230	231	223	207	199	191	170	147	130	121	95	76	62	52	41	31
74	89	102	119	139	151	173	179	197	212	225	223	222	214	198	192	183	164	141	124	117	92	74	62	52	40	30
72	87	100	117	136	149	171	176	191	206	217	214	212	204	190	183	174	158	134	119	112	89	73	61	51	39	30
69	84	98	115	134	147	167	172	184	200	209	205	202	196	182	174	165	150	127	114	108	85	71	59	50	38	30
66	80	95	112	130	143	161	168	176	193	200	195	192	188	175	165	156	142	120	108	103	82	69	58	48	37	29
63	77	92	110	127	138	154	161	167	184	190	185	183	180	168	155	147	133	113	103	97	79	67	57	46	36	29
60	73	88	106	123	133	147	154	159	173	179	175	175	171	161	145	138	125	106	97	92	76	65	55	44	35	28
57	70	85	102	119	127	140	146	151	161	167	165	165	162	152	136	129	115	99	92	88	72	63	54	43	34	27
55	67	81	98	114	122	133	138	143	149	154	155	155	152	143	127	120	107	93	86	84	69	61	52	42	33	26
52	64	78	92	108	117	127	129	134	136	142	143	142	141	133	118	110	98	86	80	80	66	58	50	41	33	25
50	61	74	87	103	111	121	121	125	125	130	131	129	129	124	109	100	91	81	74	75	63	55	47	40	32	24
47	58	70	82	97	106	115	111	115	114	119	119	116	117	114	100	91	83	75	69	70	60	52	45	39	31	23
44	54	67	78	90	100	107	102	104	103	109	107	104	106	105	92	82	76	69	64	65	56	49	43	37	29	22
41	51	63	73	84	93	100	93	94	93	98	96	94	96	96	83	74	68	63	59	60	52	46	41	35	28	21
38	48	58	68	78	86	91	84	84	83	88	85	85	87	87	74	67	62	58	55	56	48	43	39	33	26	20
35	45	54	63	72	79	83	75	76	74	78	77	77	78	79	66	61	56	52	51	51	44	41	37	31	25	19
33	41	49	58	67	72	75	67	68	67	69	69	70	71	71	59	56	52	47	47	47	41	38	35	29	24	18
31	38	44	53	62	66	67	60	61	60	62	62	63	63	63	54	51	47	43	43	43	38	36	32	28	23	17
28	34	40	48	58	61	61	53	55	55	55	56	57	56	56	49	46	43	40	39	39	35	34	30	26	22	16
26	31	37	43	53	56	54	48	50	49	50	50	50	50	45	42	39	37	36	36	33	32	28	24	21	15	
24	29	34	39	49	50	49	43	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
23	27	31	36	44	44	43	39	39	39	40	39	39	39	41	37	34	32	31	30	31	30	28	24	20	18	13
21	25	29	33	40	39	38	35	35	35	36	35	35	35	35	37	32	31	29	28	28	28	26	22	18	16	12

COMMENTS: NO OBVIOUS SAT.  
 UNFTP TEST: UTRC 17.69, DX=.105, DY=.170

Figure 25B. Test Run 17.69 -- Normalization of Composite Frame

\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\*  
HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

PROJECT: UNIFIED NAVY FIELD TEST PROGRAM

UTRC 17.69, DX=-.105, DY=-.170  
NO OBVIOUS SAT.

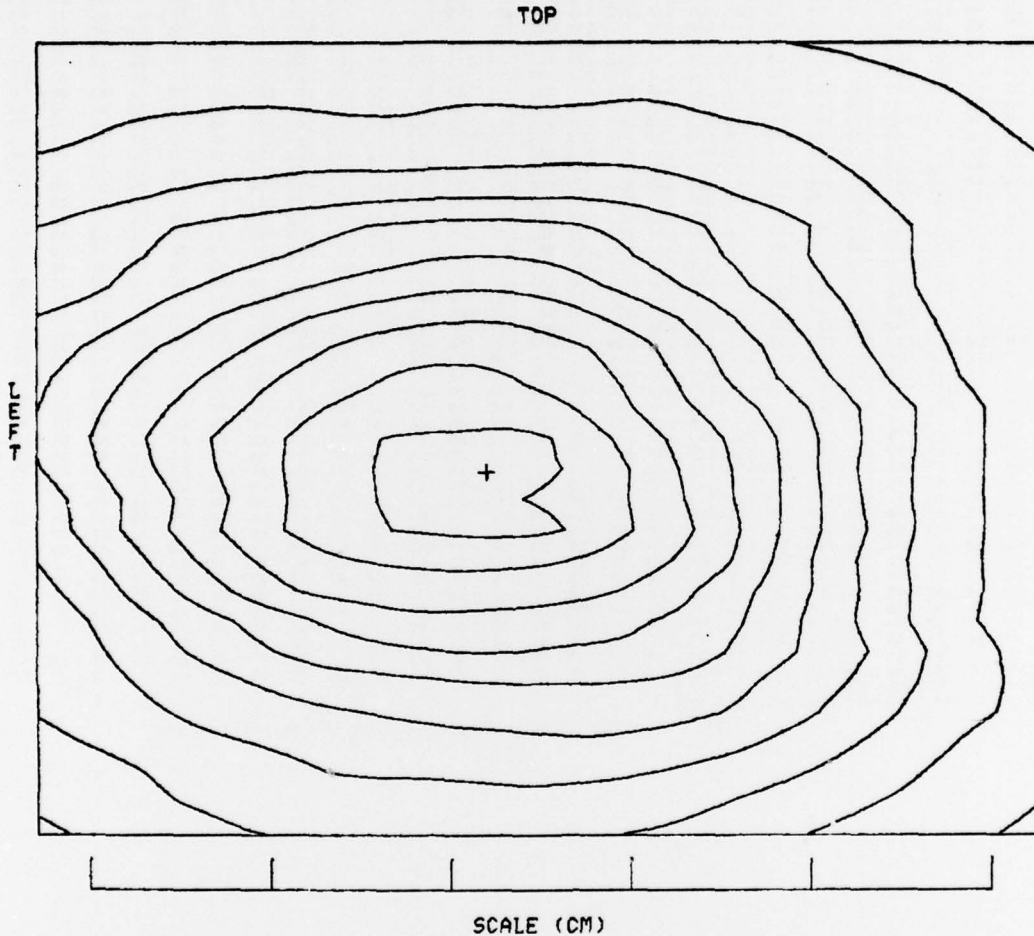
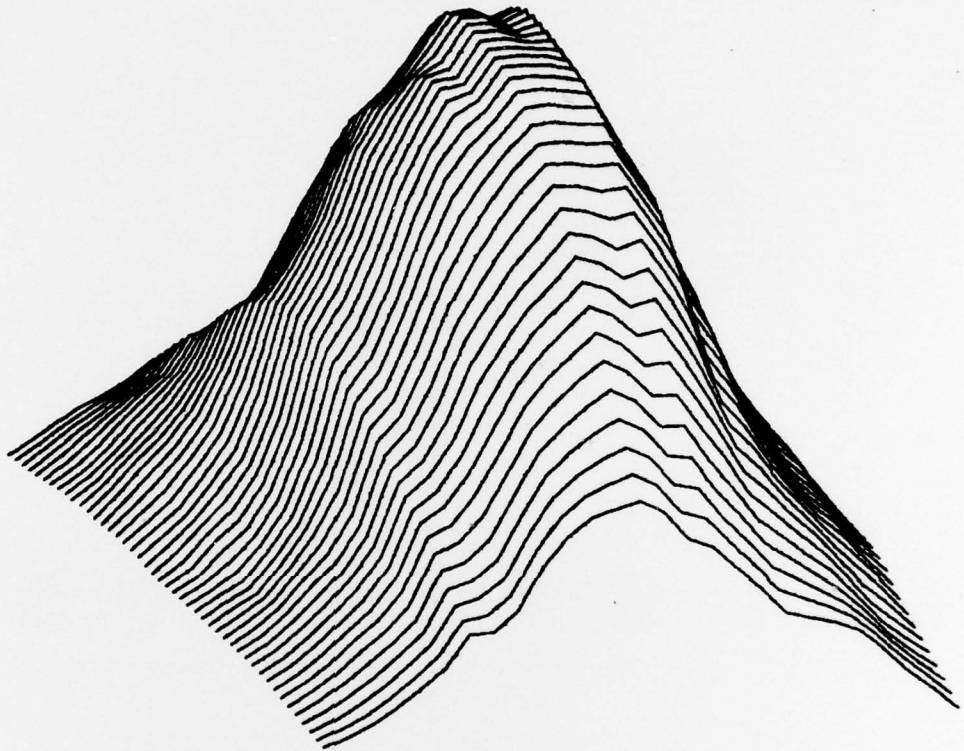


Figure 25C. Test Run 17.69 -- 2D Contour Map of Composite Frame

**\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\***  
HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

**PROJECT: UNIFIED NAVY FIELD TEST PROGRAM**

UTRC 17.69, DX=.105, DY=.170  
NO OBVIOUS SAT.



LEFT

Figure 25D. Test Run 17.69 -- 3D Plot of Composite Frame

\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\*  
 RUN DATE: 27-JUL-77 15:18:41

HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

PROJECT: UNIFIED NAVY FIELD TEST PROGRAM

UNFTP TEST: UTRC 17.75, DX=.065, DY=.121  
 COMMENTS: NO SAT., LASER SPATTERED; ONLY 16 OF 55 FRMS. SHOWED POWER.  
 NAEL RUN VL2-\*\*\* CODE 1201  
 55 FRAMES FROM 2 ON, TIME 15 47 27.447



COORD X Y  
 PEAK 1.657 1.270  
 CENT 1.689 1.284  
 VARIA 0.088 0.336  
 PK100 1.155  
 PK06 1.132  
 PEAK 1526.000

CONTUR	0	1	2	3	4	5	6	7	8	9
% PEAK	0.0	3.0	10.0	20.0	40.0	50.0	60.0	70.0	80.0	90.0
LEVEL	0.000	45.780	152.600	305.200	610.400	763.000	915.600	1068.200	1220.800	1373.400
AREA	11.467	4.640	1.464	1.227	0.731	0.590	0.409	0.291	0.197	0.063
VOLUME	1489.4	1321.6	1092.5	953.9	733.9	636.4	484.4	367.2	260.0	89.6

Figure 26A. Test Run 17.75 -- Contour Array of Composite Frame



\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\*  
HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS

PROJECT: UNIFIED NAVY FIELD TEST PROGRAM

UTRC 17.75, DX=.065, DY=.121

NO SAT., LASER SPATTERED; ONLY 16 OF 55 FRAMES SHOWED POWER.

TOP

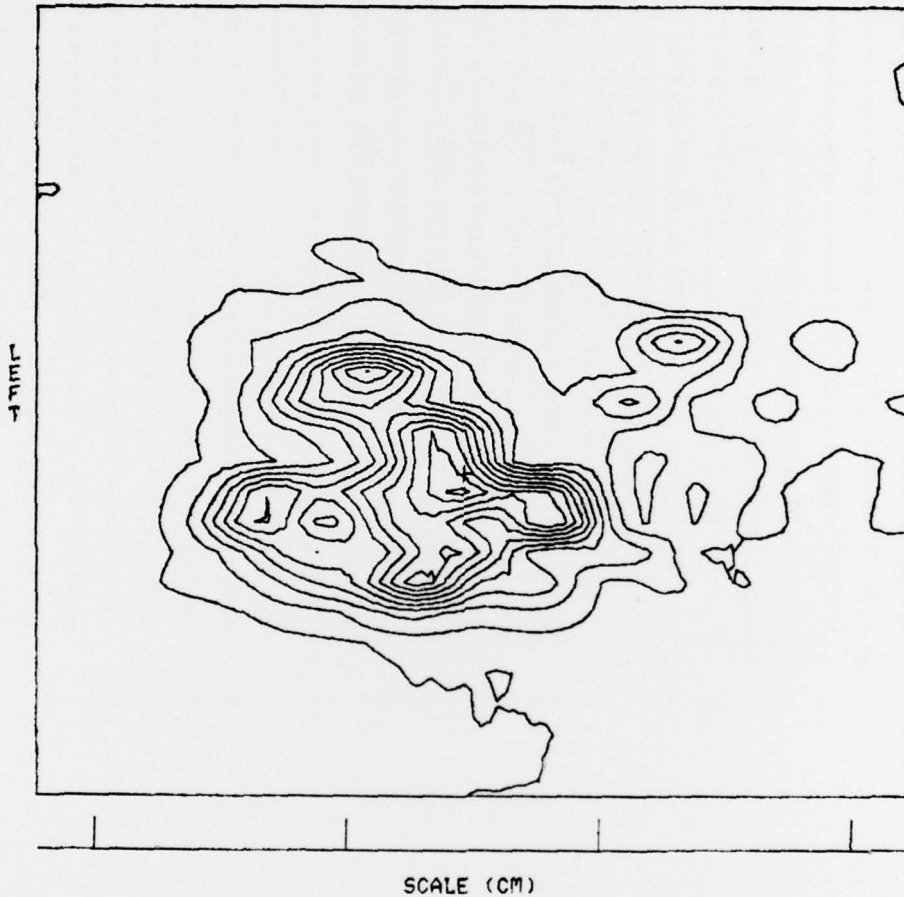


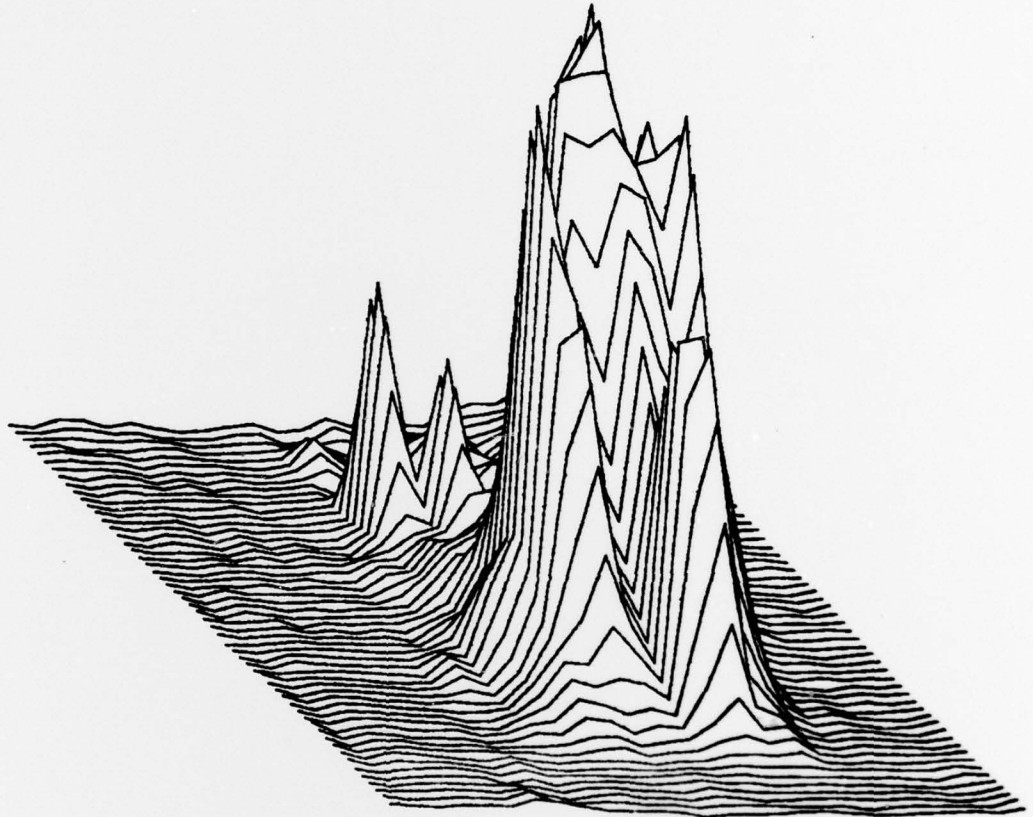
Figure 26C. Test Run 17.75 -- 2D Contour Map of Composite Frame

**\*\*\* U. S. ARMY BALLISTIC RESEARCH LABORATORY \*\*\***  
**HIGH ENERGY LASER PROGRAM BEAM DIAGNOSTICS**

**PROJECT: UNIFIED NAVY FIELD TEST PROGRAM**

UTRC 17.75, DX=.065, DY=.121

NO SAT., LASER SPUTTERED; ONLY 16 OF 55 FRAMES SHOWED POWER.



LEFT

Figure 26D. Test Run 17.75 -- 3D Plot of Composite Frame

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