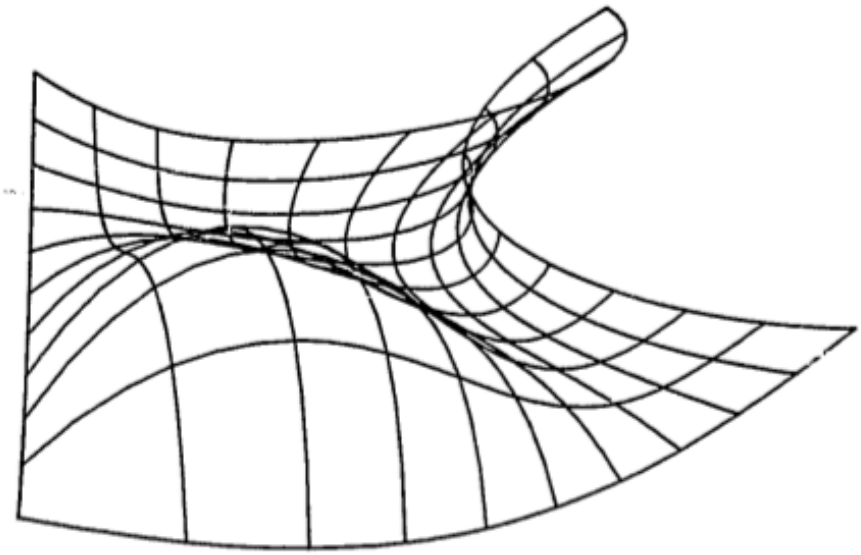
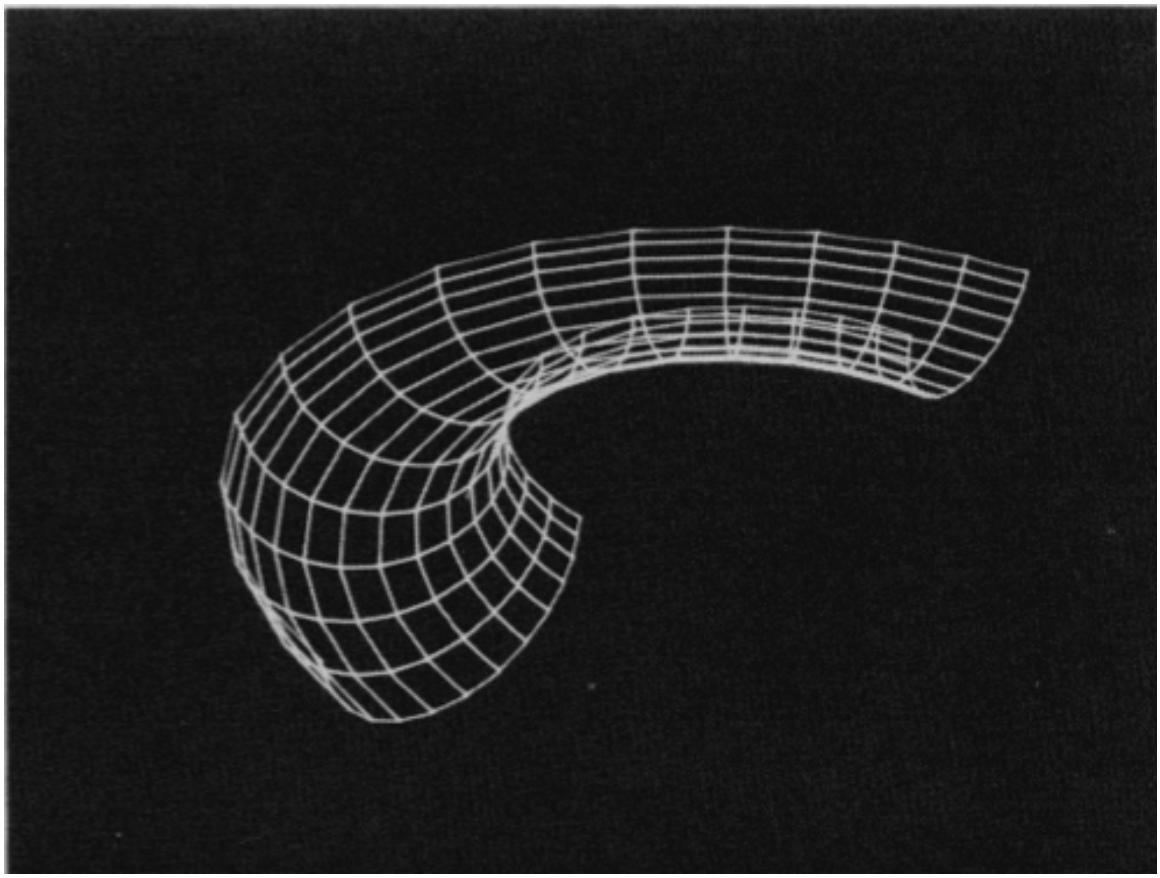
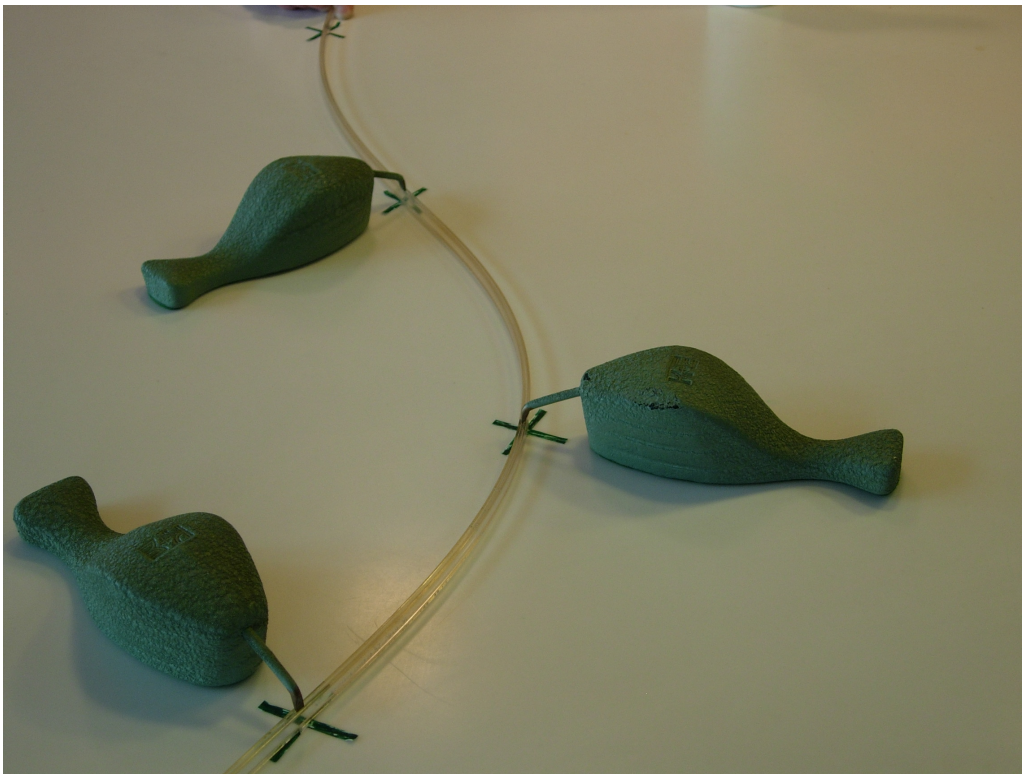


[Figure 1: An irregularly curved surface without hidden lines removed.]

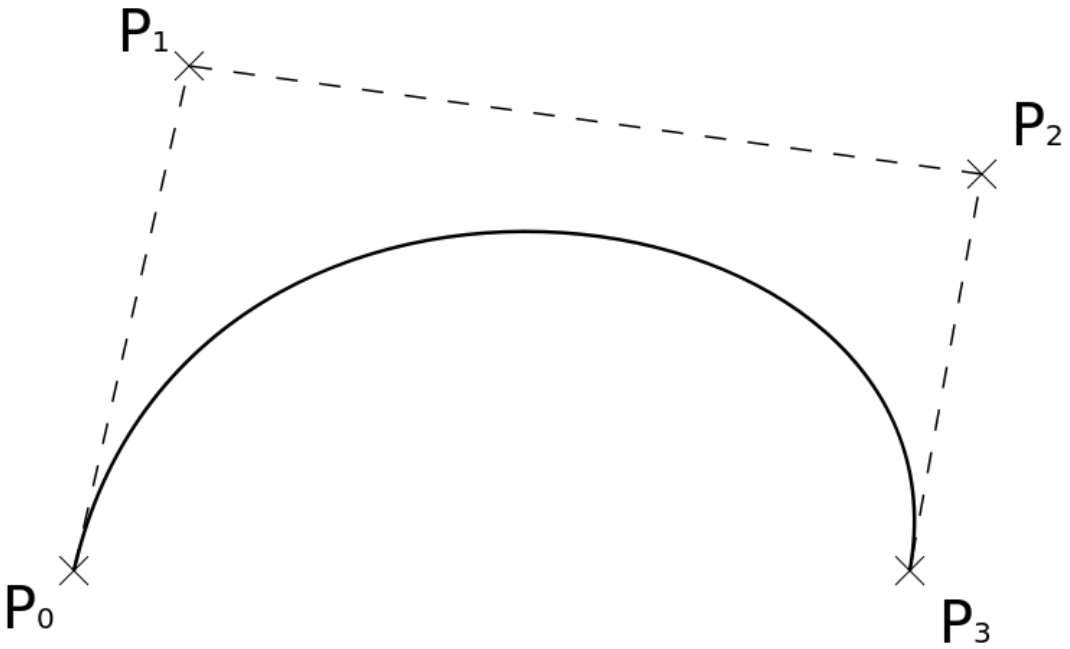


[Figure 2: A polygon mesh approximating a curved surface.]



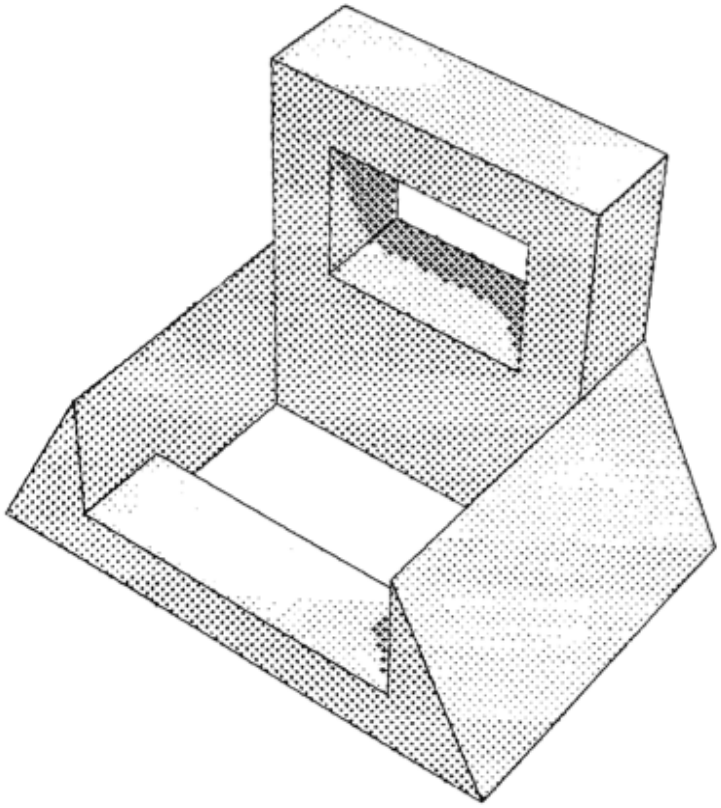
[Figure 3: Spline ducks forming a curve.]

[Figure 4: A draftsman at Boeing working with spline ducks while lofting.]

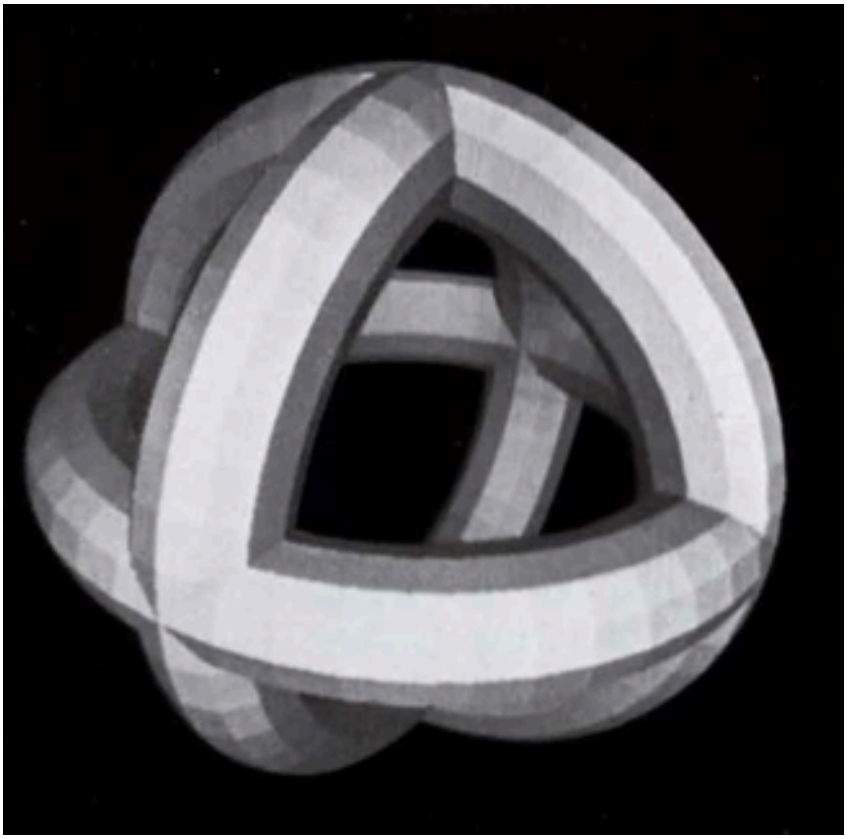


[Figure 5: A cubic Bézier curve.]

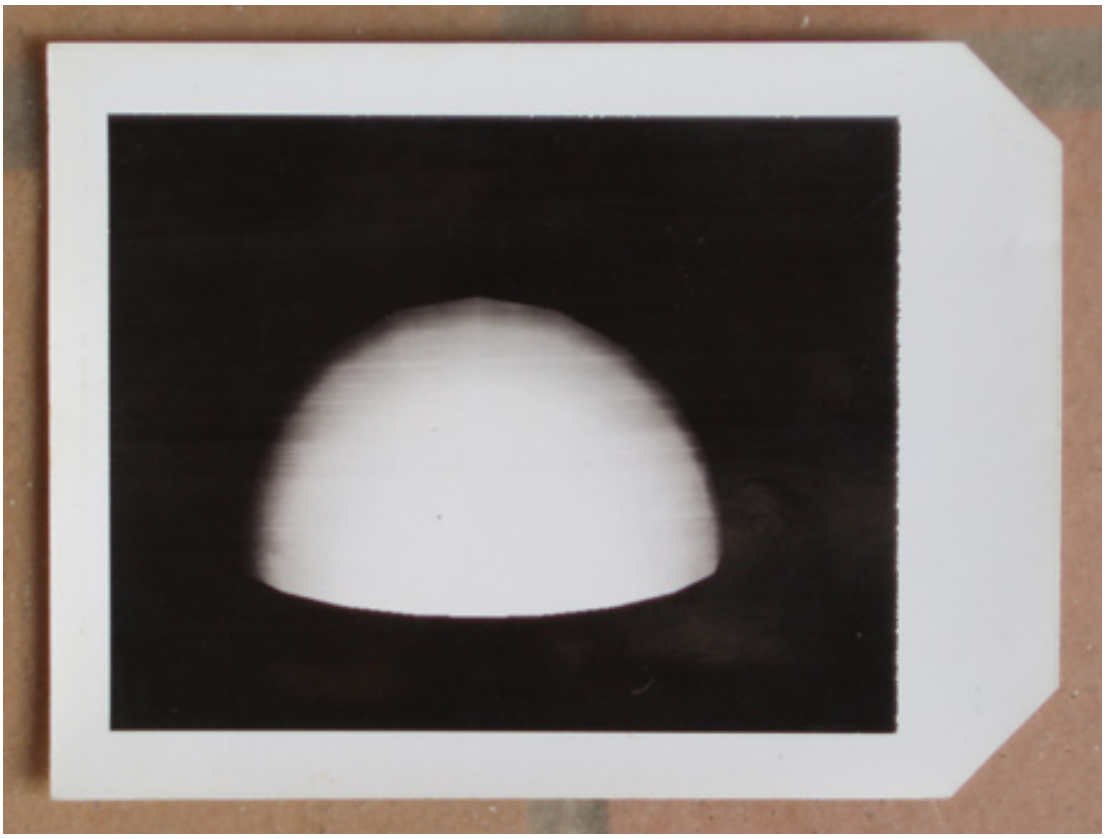
[Figure 6: Bézier curves used in digital typography design.]



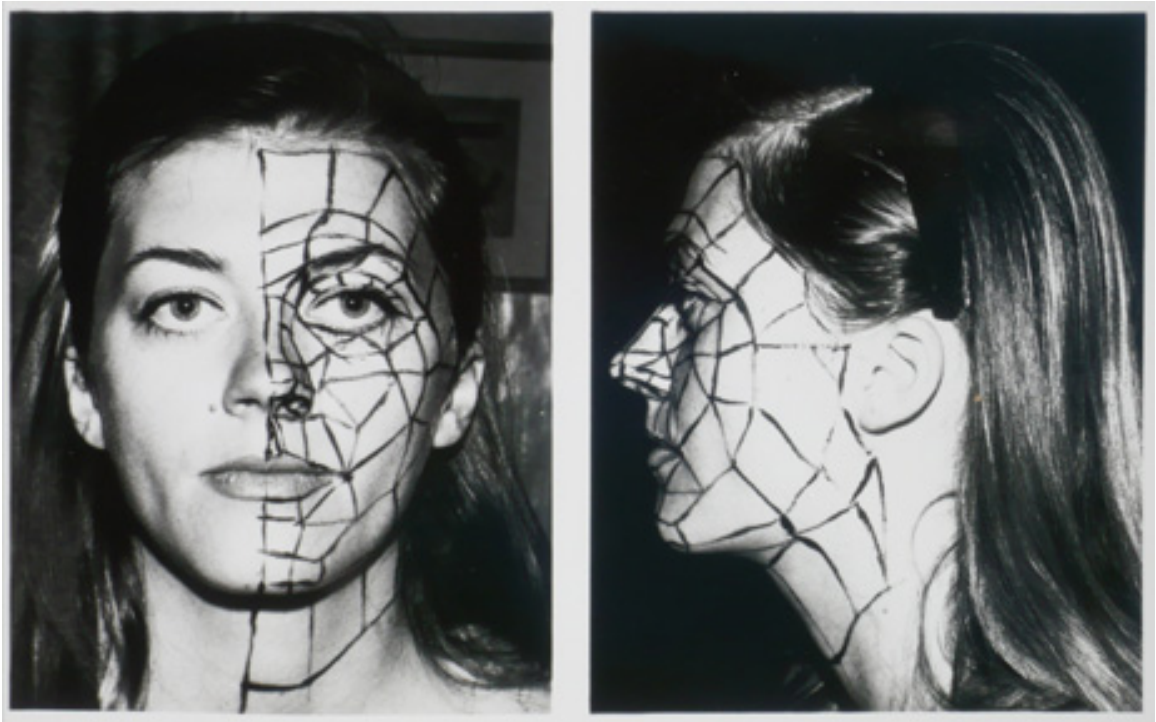
[Figure 7: Object shading using Arthur Appel's ray casting algorithm.]



[Figure 8: Object shading using Warnock's hidden surface algorithm.]

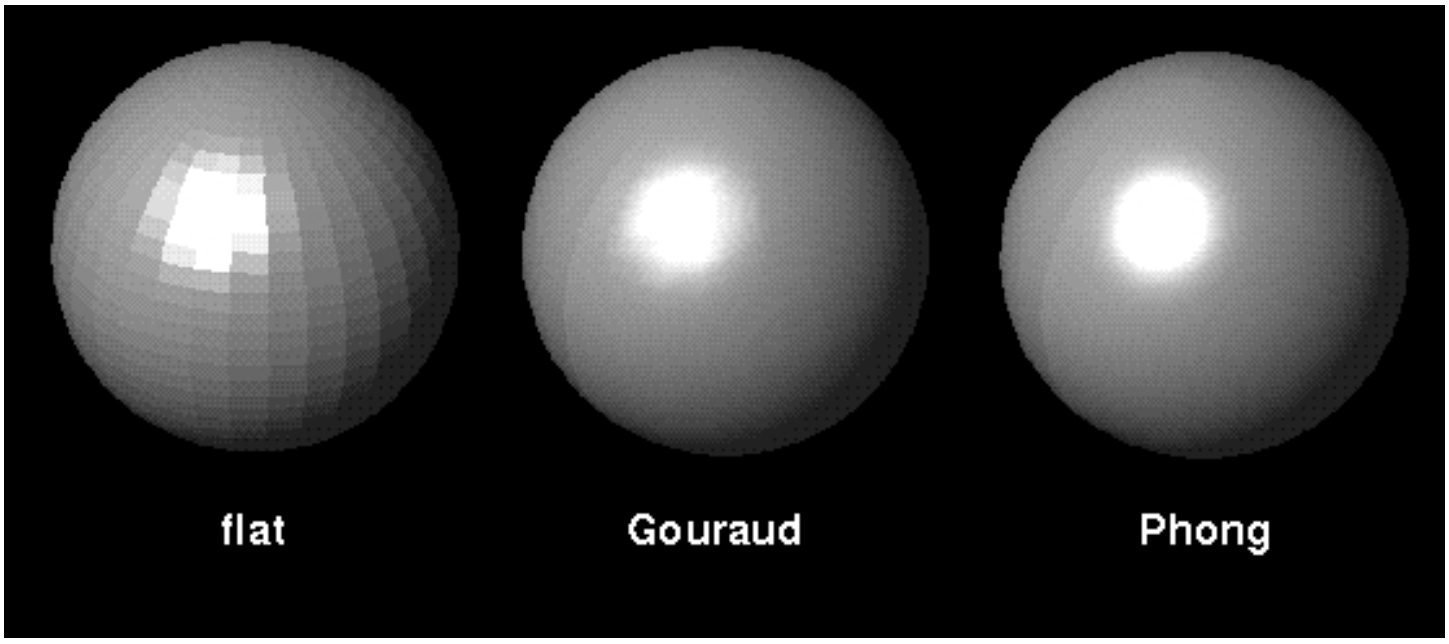


[Figure 9: The first Polaroid demonstrating Gouraud's shading technique.]



[Figure 10: Sophie Gouraud's face with polygonal lines for digitization.]

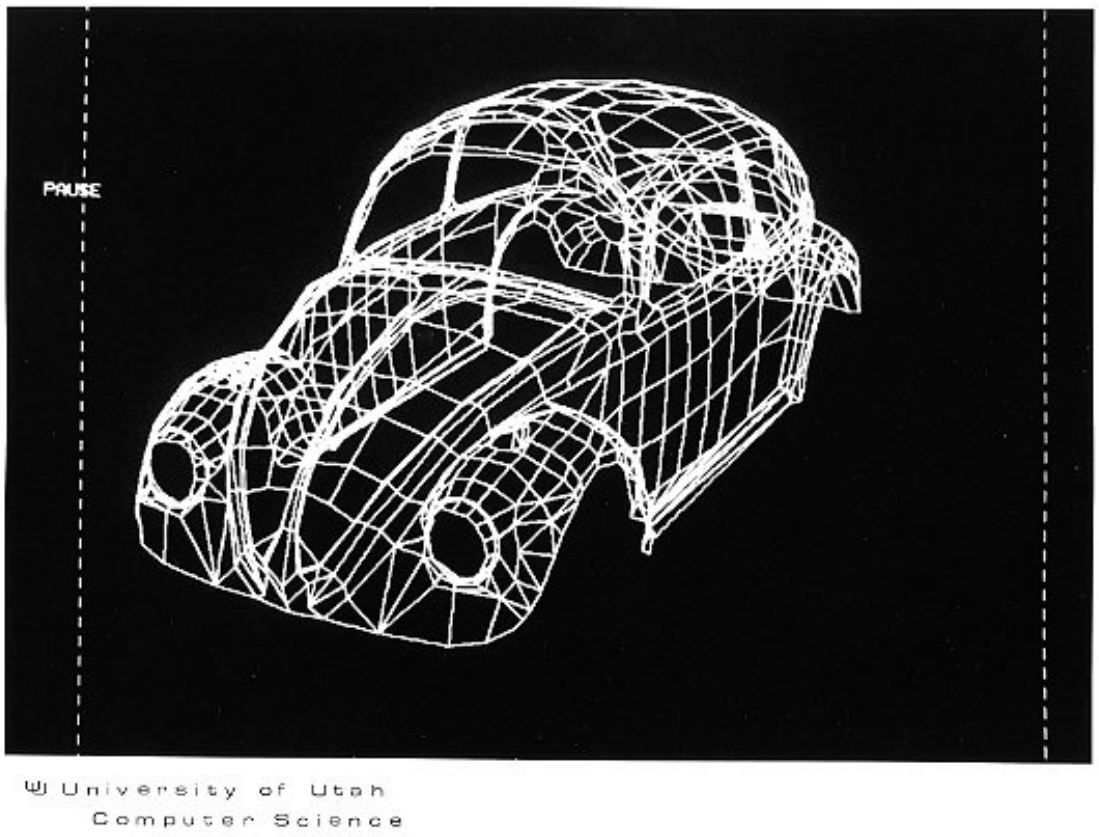
[Figures 11, 12: Sophie's face rendered with flat shading and Gouraud shading.]



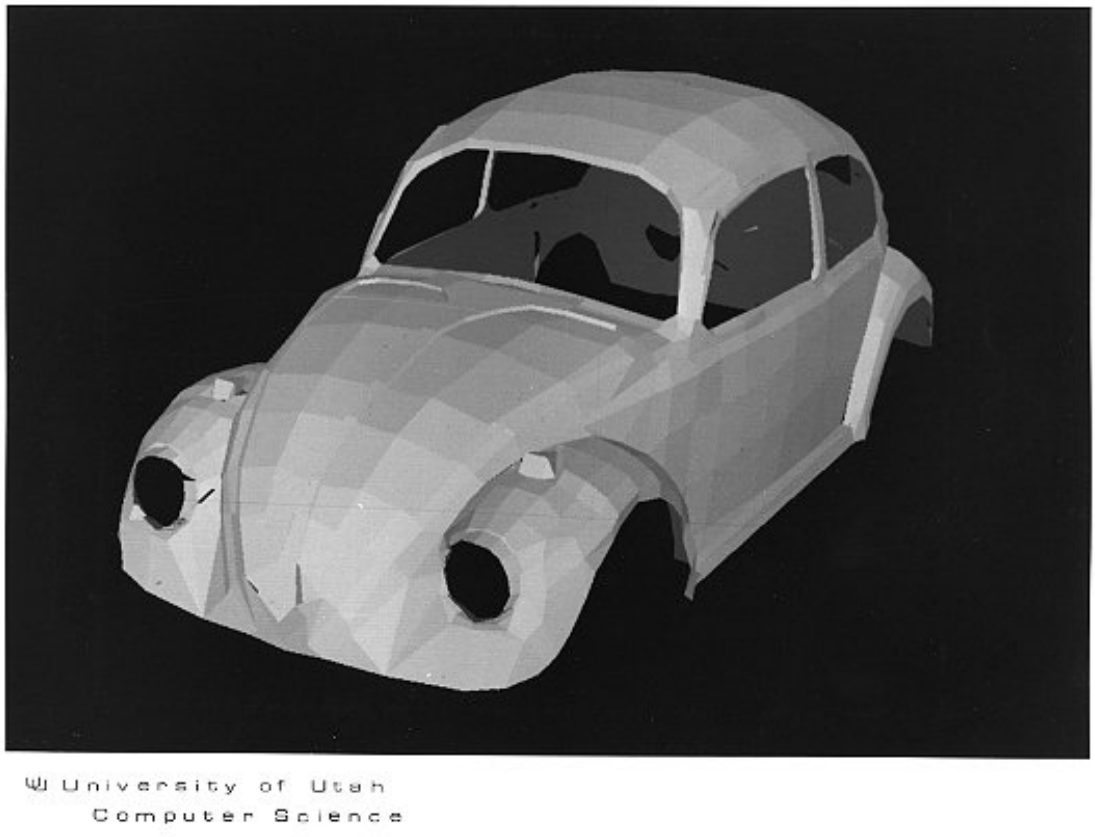
[Figure 13: A sphere rendered in flat, Gouraud, and Phong shading.]

[Figure 14: Students measuring Marsha Sutherland's VW Bug for digitization, 1971.]

[Figure 15: Students measuring Marsha Sutherland's VW Bug for digitization, 1971.]



[Figure 17: The wireframe mesh of the finished VW Bug.]



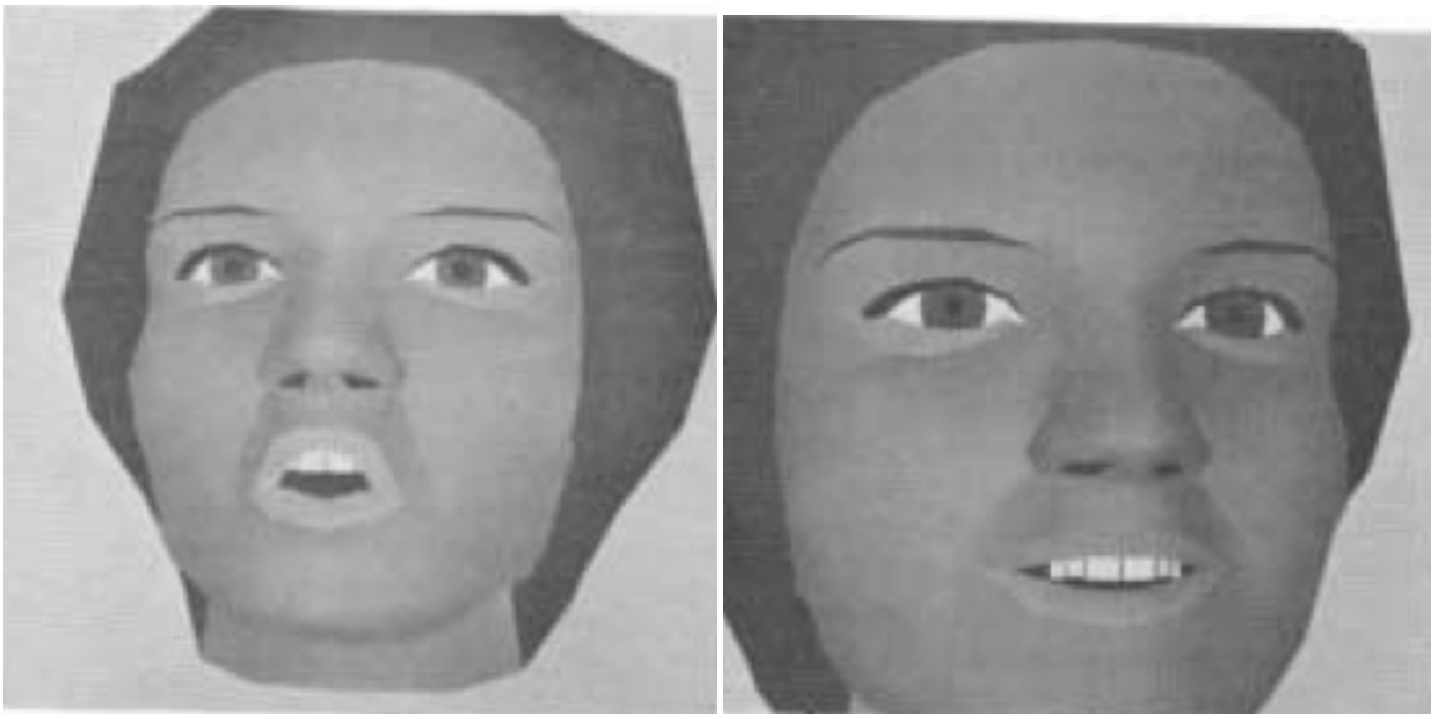
[Figure 18: The flat shaded rendering of the finished VW Bug.]

[Figure 19: A plaster casting of Edwin Catmull's hand, to be used for digitization, 1971]

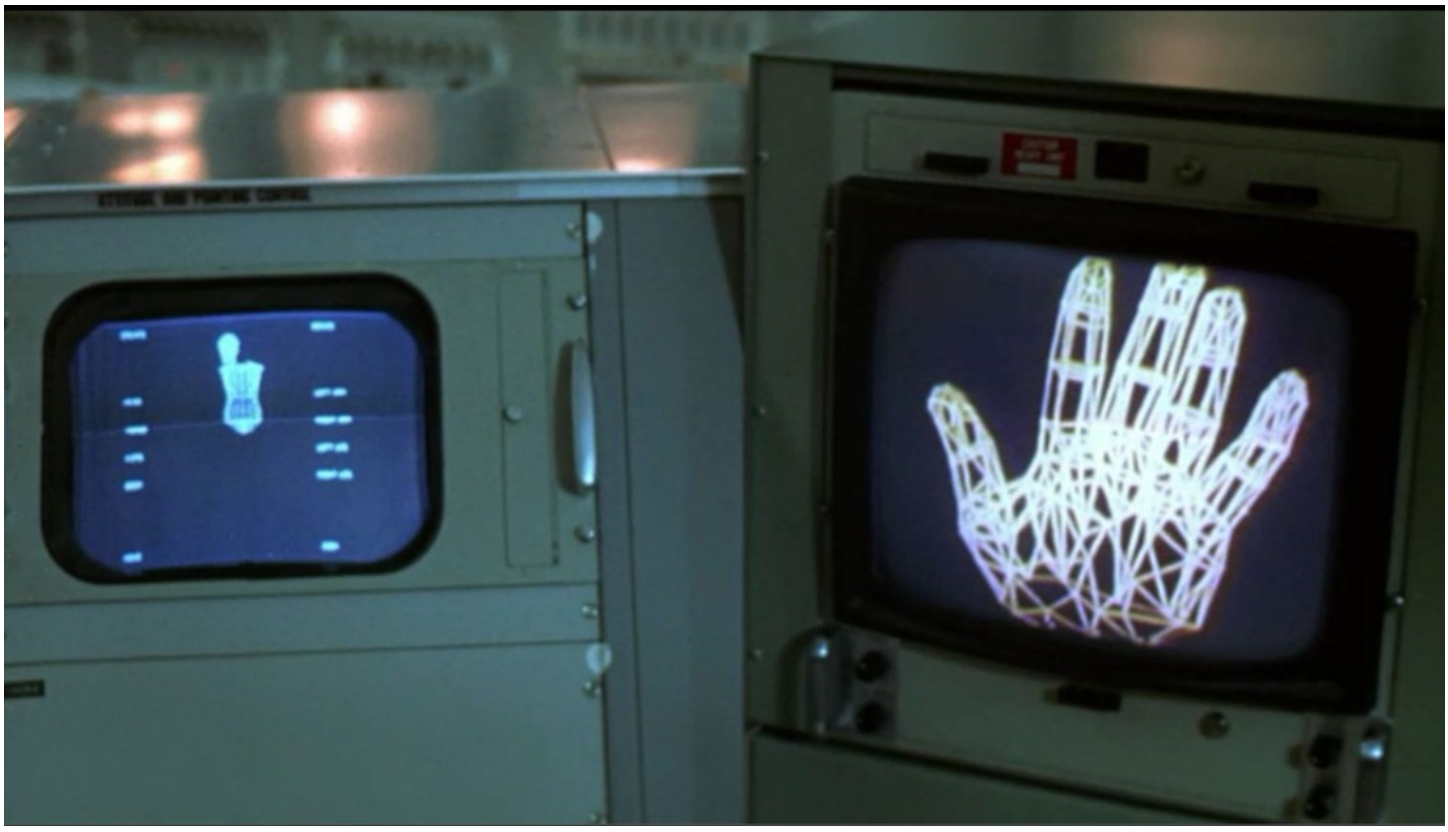
[Figure 19: Detail of a plaster mold of Edwin Catmull's hand, marked with polygons for digitization, 1971]

[Figure 20: A gantry rig with coordinate measuring machine to digitize the hand, 1971.]

[Figure 22: The final rendering of the digitized hand.]

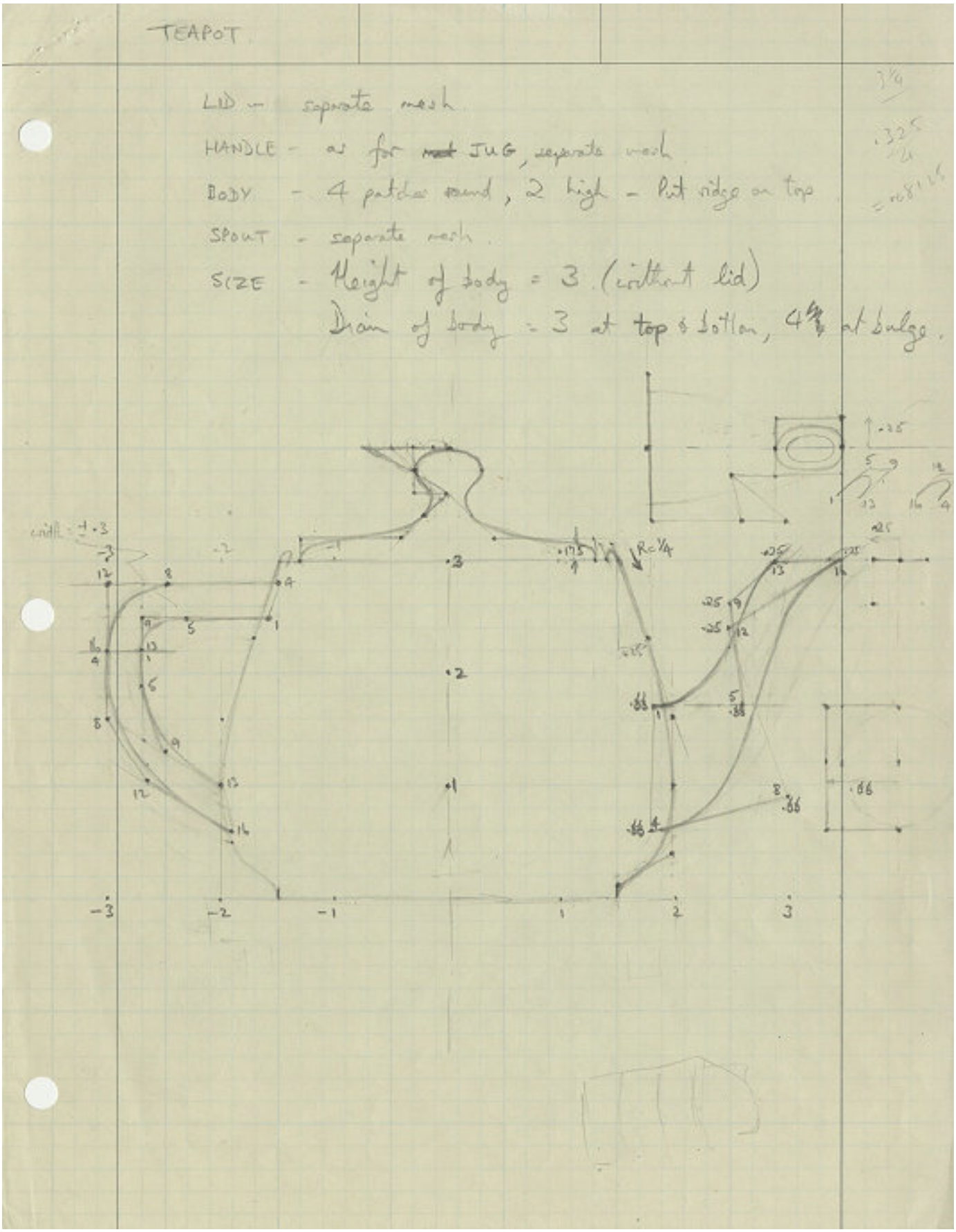


[Figure 23: Two phases of the face used in Fred Parke's animation, 1971.]

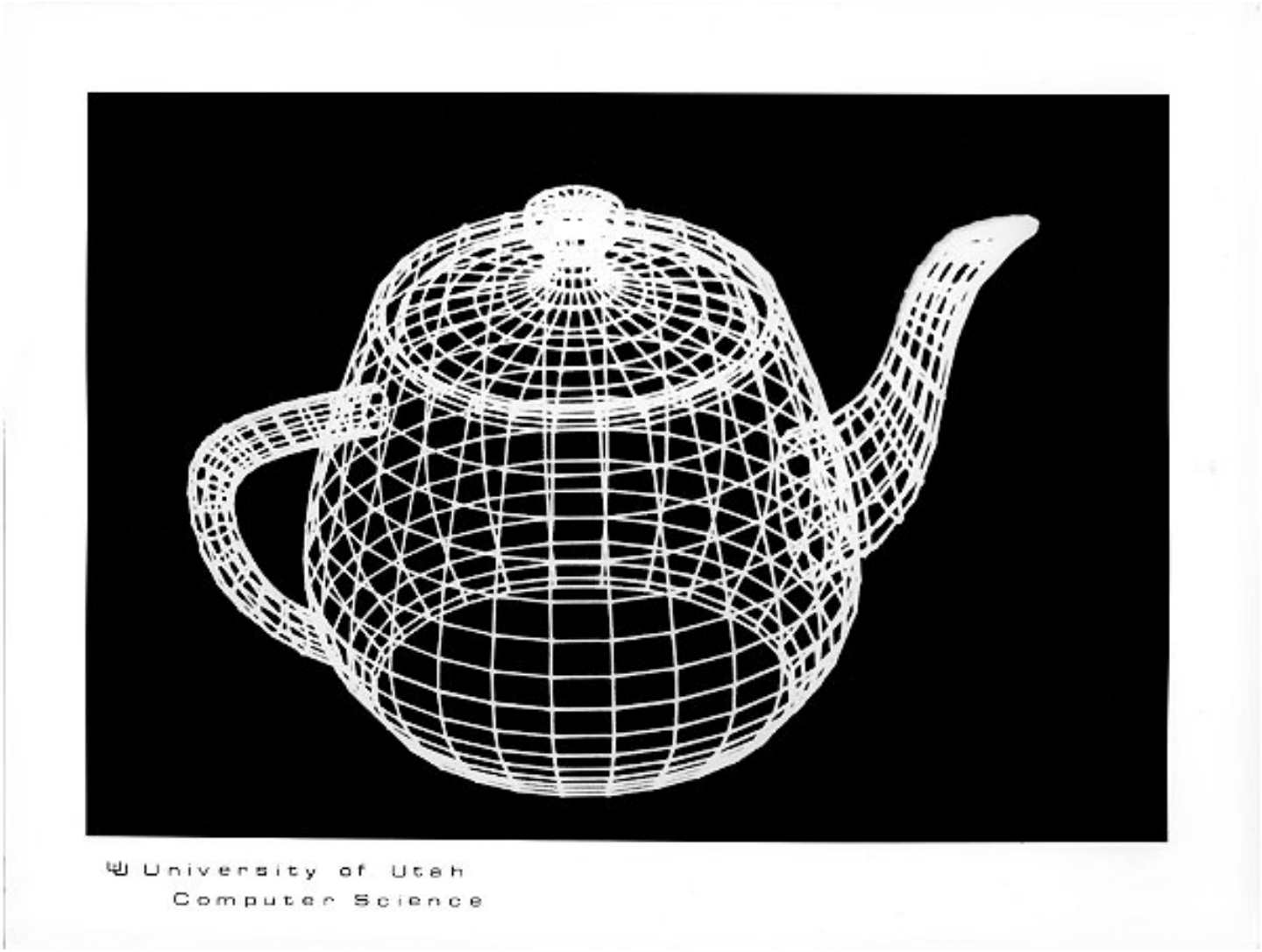


[Figure 24: Catmull's hand in the film *Futureworld*, 1976.]

[Figure 25: The mid-century Melitta teapot that inspired the Utah Teapot.]



[Figure 26: The sketch Martin Newell made of the original Melitta, 1974.]

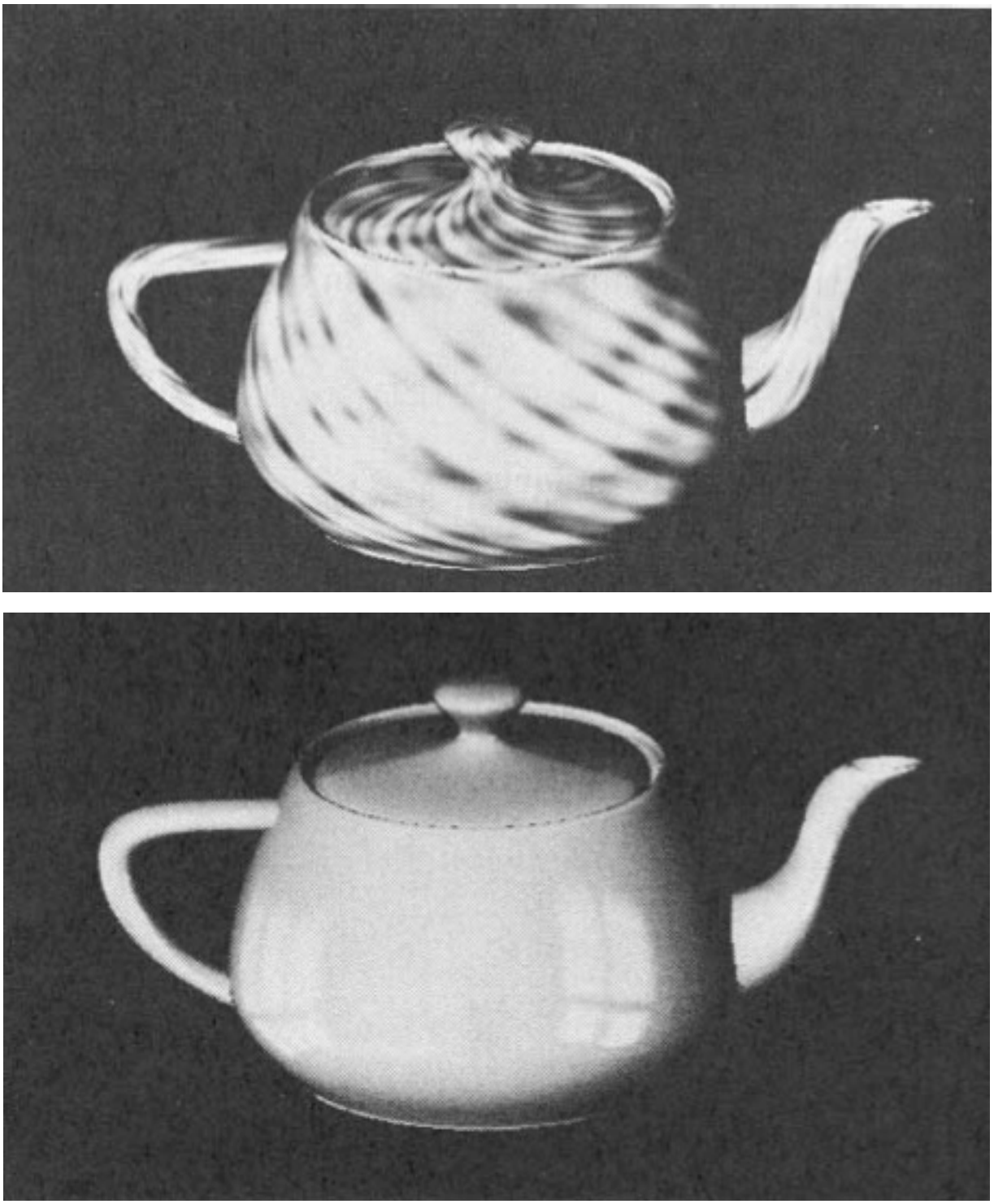


[Figure 27: Wireframe of the original teapot model, 1974. Note the missing bottom geometry.]

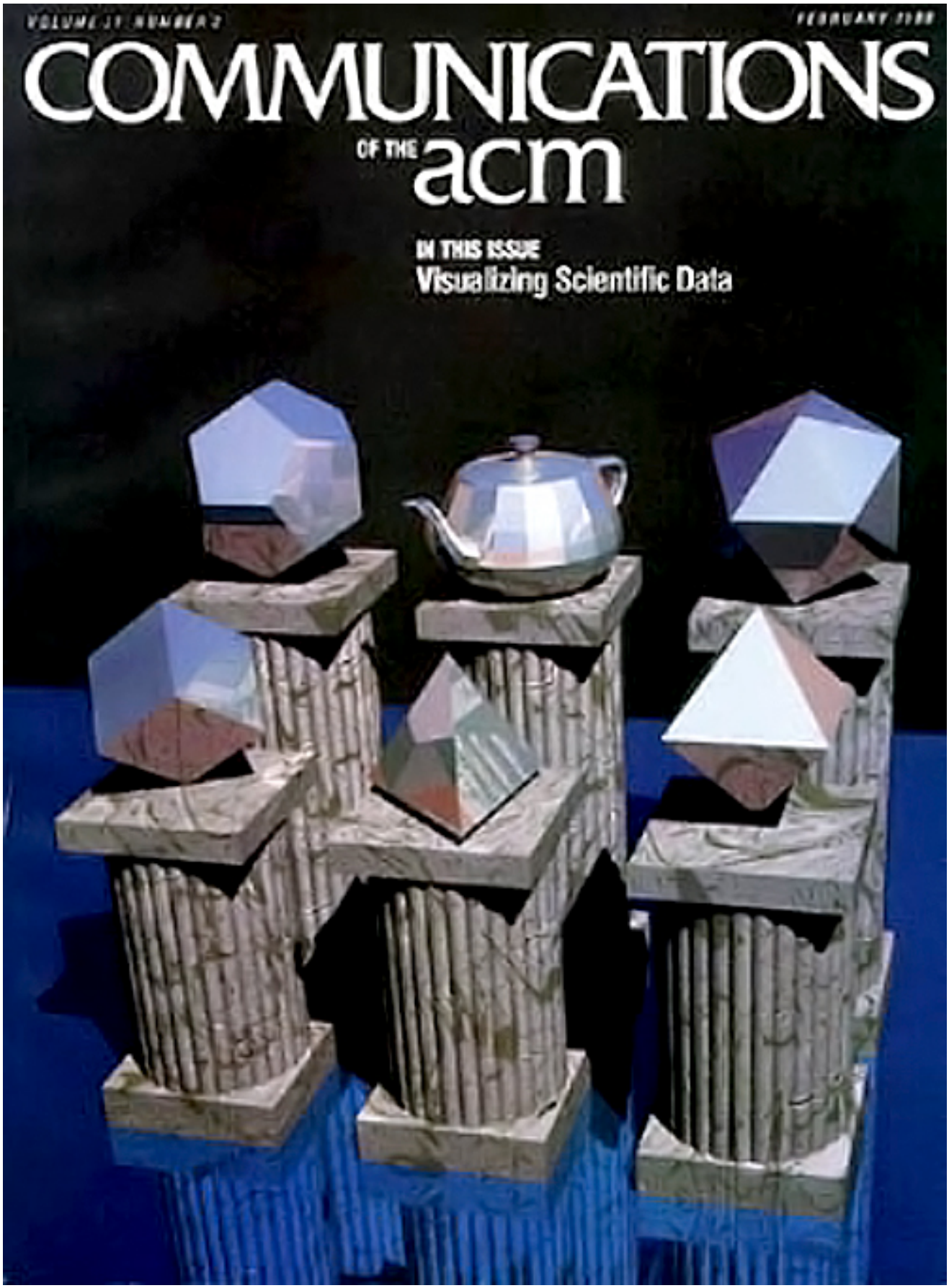
Teapot Data – Patch Definitions

Patch Number	16 Indices Into Table of x, y, z Values															
rim –																
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	4	17	18	19	8	20	21	22	12	23	24	25	16	26	27	28
3	19	29	30	31	22	32	33	34	25	35	36	37	28	38	39	40
4	31	41	42	1	34	43	44	5	37	45	46	9	40	47	48	13
body –																
5	13	14	15	16	49	50	51	52	53	54	55	56	57	58	59	60
6	16	26	27	28	52	61	62	63	56	64	65	66	60	67	68	69
7	28	38	39	40	63	70	71	72	66	73	74	75	69	76	77	78
8	40	47	48	13	72	79	80	49	75	81	82	53	78	83	84	57
9	57	58	59	60	85	86	87	88	89	90	91	92	93	94	95	96
10	60	67	68	69	88	97	98	99	92	100	101	102	96	103	104	105
11	69	76	77	78	99	106	107	108	102	109	110	111	105	112	113	114
12	78	83	84	57	108	115	116	85	111	117	118	89	114	119	120	93
handle –																
13	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136
14	124	137	138	121	128	139	140	125	132	141	142	129	136	143	144	133
15	133	134	135	136	145	146	147	148	149	150	151	152	69	153	154	155
16	136	143	144	133	148	156	157	145	152	158	159	149	155	160	161	69
spout –																
17	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177
18	165	178	179	162	169	180	181	166	173	182	183	170	177	184	185	174
19	174	175	176	177	186	187	188	189	190	191	192	193	194	195	196	197
20	177	184	185	174	189	198	199	186	193	200	201	190	197	202	203	194
lid –																
21	204	204	204	204	207	208	209	210	211	211	211	211	212	213	214	215
22	204	204	204	204	210	217	218	219	211	211	211	211	215	220	221	222
23	204	204	204	204	219	224	225	226	211	211	211	211	222	227	228	229
24	204	204	204	204	226	230	231	207	211	211	211	211	229	232	233	212
25	212	213	214	215	234	235	236	237	238	239	240	241	242	243	244	245
26	215	220	221	222	237	246	247	248	241	249	250	251	245	252	253	254
27	222	227	228	229	248	255	256	257	251	258	259	260	254	261	262	263
28	229	232	233	212	257	264	265	234	260	266	267	238	263	268	269	242
bottom –																
29	270	270	270	270	279	280	281	282	275	276	277	278	271	272	273	274
30	270	270	270	270	282	289	290	291	278	286	287	288	274	283	284	285
31	270	270	270	270	291	298	299	300	288	295	296	297	285	292	293	294
32	270	270	270	270	300	305	306	279	297	303	304	275	294	301	302	271

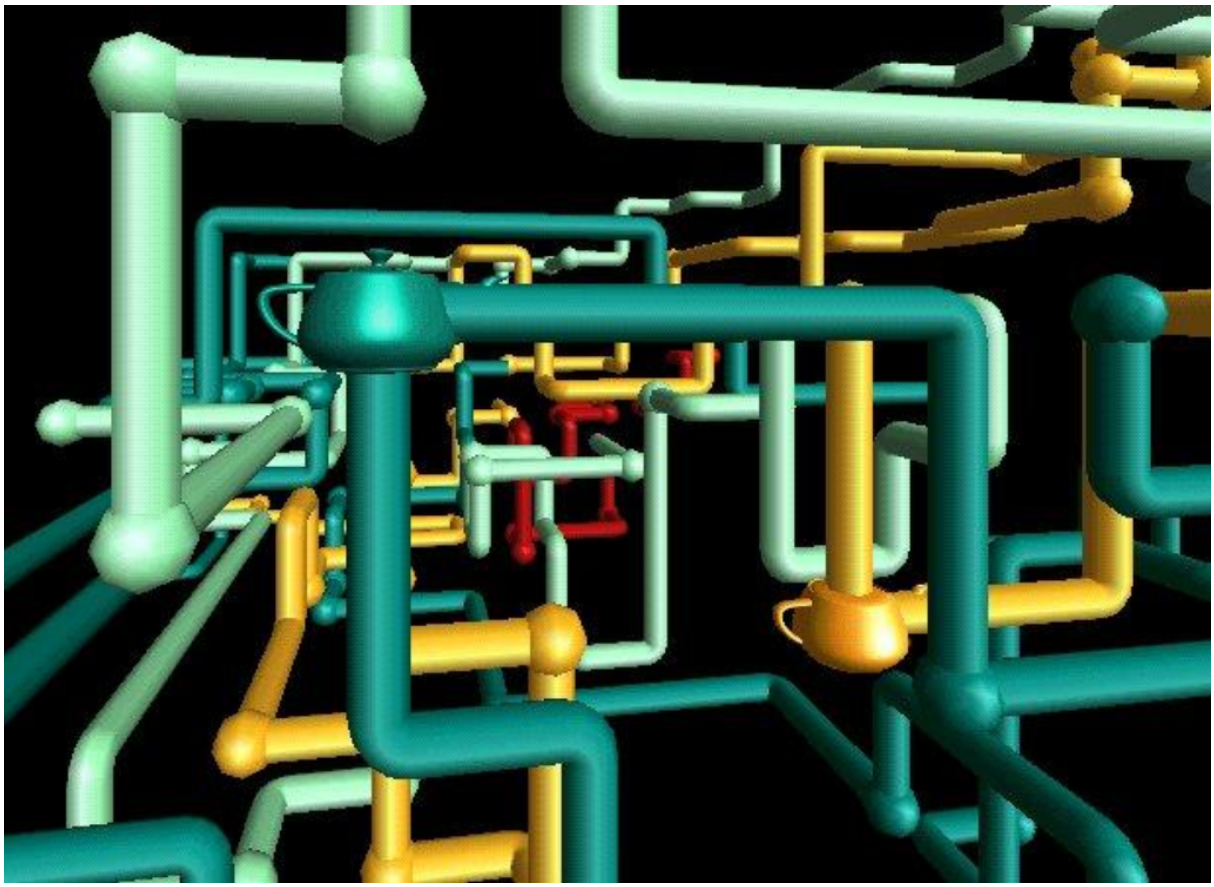
[Figure 28: The teapot's patch definitions, note the bottom geometry data, added by another researcher.]



[Figure 29: A number of teapots with early texture mapping by Blinn and Newell, 1976.]

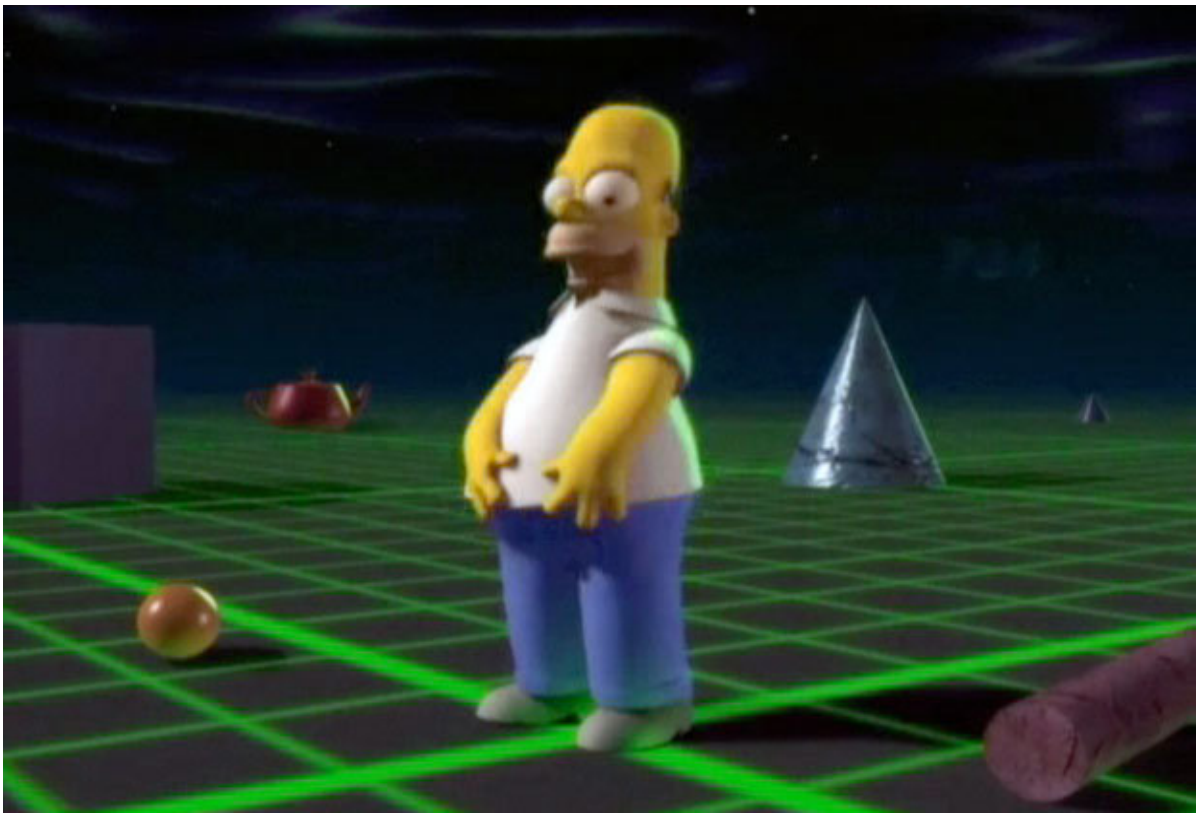


[Figure 30: "The Six Platonic Solids," including the teapot in the background, 1987.]



[Figure 30: Teapots in the early Windows screensaver “Pipes,” 1994.]

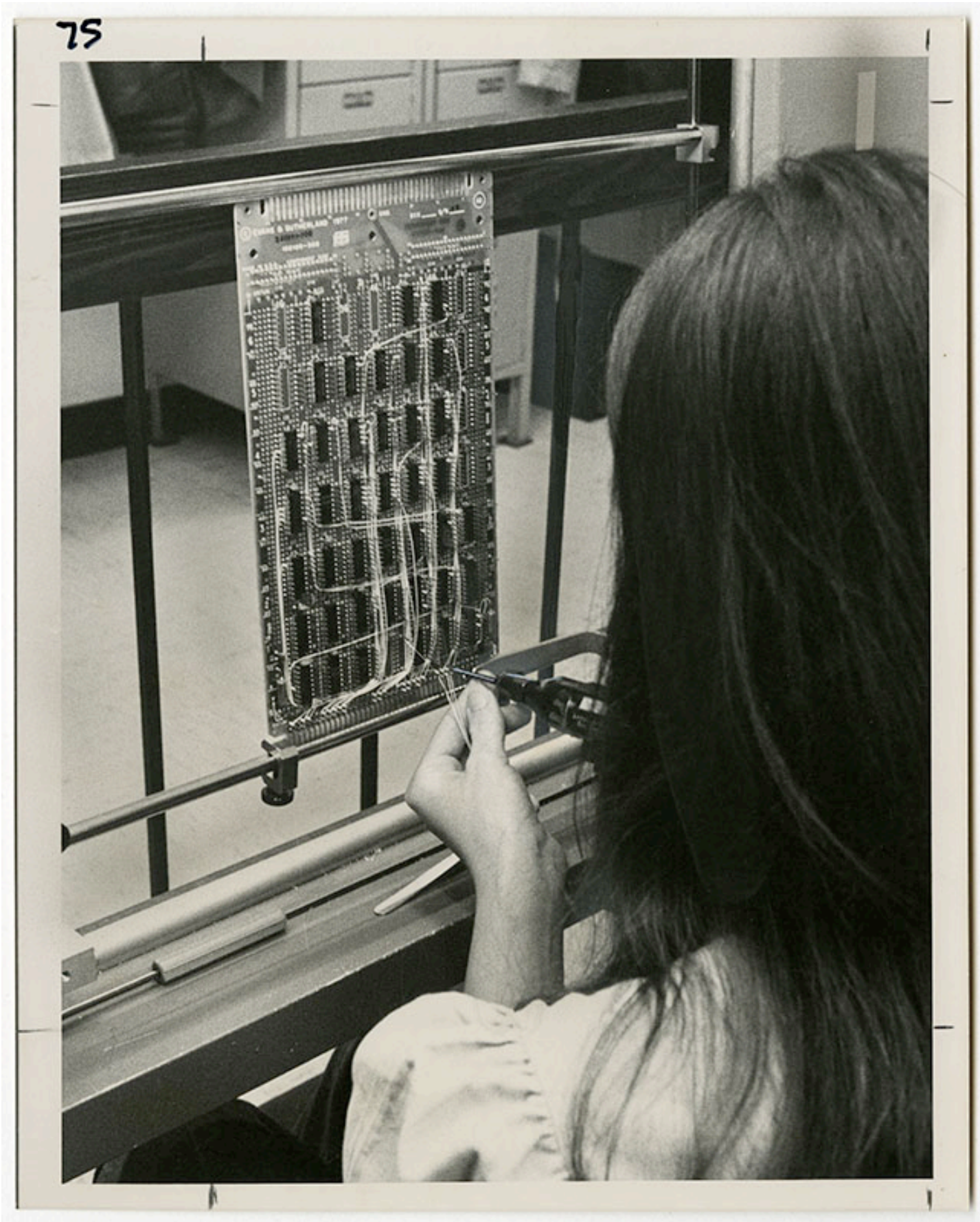
[Figure 32: A scene from *Toy Story* (1995) featuring the Utah teapot.]



[Figure 33: A scene from *The Simpsons* "Treehouse of Horror VI. Note the teapot in the back left.]

[Figure 34: Students digitizing Marsha Sutherland's VW Bug. Note the female students in the foreground.]

[Figure 35: Women working on hardware at E&S, early 1970s.]



[Figure 36: A woman soldering a circuit board at the E&S, early 1970s.]

[Figure 37: Lenna, a 512x512 pixel test image used to test image-processing algorithms, 1972.]

[Figure 38: An exhibit documenting the history and use of the Utah teapot at SIGGRAPH 1989.]