Index

Agassiz, Louis, 8
Alvan Clark and Sons, 15, 81–2, 92, 102, 114
Alvord, Benjamin, 30
Alvord, William, 80
André, Charles, 68, 69
Angot, Alfred, 69
Astrophysics, 39
Atherton, Faxon D., 24, 51–2, 61
Auwers, Arthur, 62
Banning, William, 182
Barnard, Edward Emerson, 179–80, 194, 195, 200, 202
Bierstadt, Albert, 103
Bishop, Thomas, 196
Bond, George P., 77
Bonst, J. H. C., 121, 194
Bonstems, Arno, 57
Booth, Newton, 10
Bovard, M. M., 197–8
Bowman, A. W., 79
Boyd, James T., 139, 174, 189
Boydne, Uriah Atherton, 102, 114
Bradford, A. C., 111
Brasshear, John, 118, 147, 156–7, 174, 177, 199
Breuer, William H., 25–7
British Association for the Advancement of Science, 48
Bryant, Mayor, 61
Bull, Storm, 136–7
Buckwalter, Charles, 174
Burnham, Searburne Wesley, 70–3, 78, 92, 99, 194, 202; and 6-inch telescope, 129; and 36-inch telescope, 134, 156
California Academy of Sciences, 8, 10, 149, 202; residuary legatee of Lick estate, 64, 183
California state legislature, 29, 153
Calver, George, 75
Chance and Company, 45
Chauvenet, William, 77
Clark, Alvan, 15, 35, 40, 48, 81, 127, 174; and 12-inch refractor, 87, 92–3; and 36-inch refractor, 82, 107, 114, 118, 170; and meridian circle, 126; see also Alvan Clark and Sons
Clark, Alvan Graham, 81, 154–5, 166–7, 173, 174, 177–8; see also Alvan Clark and Sons
Clark, George, 81, 108, 109; see also Alvan Clark and Sons
Clear Lake, 20; see also Kono Teyee
Cleveland, Grover, 113
Collins, Napoleon, 19
Common, Andrew A., 75
Copeland, Ralph, 45
Crocker, Charles, 202
Cross, Robert, 88
Daily Alta California, 11
Davidson, George, 10–11, 15, 61, 64, 103, 174; criticisms of Lick project, 30, 69, 111; University of California regent, 121
Davis, Andrew Jackson, 7
Dearborn Observatory, 76–7
Dickie, George, 138–9
Dickie, James, 138–9
Draper, Anna Palmer, 40
Draper, Henry, 39–40, 87, 156
Eaton, B. S., 198
Eichens, F. W., 48
Eliot, Charles, 38
Evans, Oliver, 188
Fair, James, 183
228  Index

Fauth and Company, 95, 113, 127
Feil, Charles, 57–9, 75, 119;
manufacturer of optical disks, 41, 45, 47; and 36-inch refractor, 82, 107, 108, 109, 114, 117, 154
Fehr, Edward, 3, 29
Floyd, Charles Rinaldo, 1
Floyd, Cora Lyons, 20–2, 76, 101, 108, 137, 203, and Clear Lake, 31; husband’s death, 202; European travels, 35, 40, 56, 61, 62, 63; life at Mount Hamilton, 143–5; pregnancy, 65
Floyd, Harry Augustus Lyons (Hal), 22, 76, 108, 202; European travels, 35, 40, 56; life at Mount Hamilton, 143–5
Floyd, John, 18
Floyd, Julia Boog, 1
Floyd, Richard Samuel, ix-xi, 30–2, 103–6, 191; background, 1, 17–22; and construction on Mount Hamilton, 33–4, 82–91, 148; death of, 183, 201–3; and Draper, 39–40; and 1889 eclipse, 199–200; European consultations on Lick telescope, 41–51, 56–9, 62, 63; and Feils, 47, 57–8; and first scientific expedition to Mount Hamilton, 67–9; and 5-inch refractor, 174; friendship with Fraser, 13, 89, 95–6, 188–91; and Gill 49–50; and great dome, 136–40, 153; and Grubb, 41–2, 48, 57–8; and Holden, 45–7, 77, 120–5, 135–6, 158–62, 181, 187–8, 193; and Huggins, 43–4; illness of, 173, 179, 181, 182, 189, 190; and Janssen, 49, 56; and Kalakaua, 97–9; and Keeler, 147; at Kono Tatyee, 31–2, 65; and Lassell, 44–5; and Leverrier, 45, 47–8, 56; and Lick, 17–18, 22–4, 60, 61, 149; life at Mount Hamilton, 142–5; and Lockyer, 45; and Lord Rosse, 42–3; on naval education, 152; and Newcomb, 35–9, 73–4, 76, 81; newspaper attacks on, 173–6; and Piazzi Smyth, 49–50; and settlement of Lick estate, 62, 64, 112; and Stokes, 45, 49; and 36-inch refractor, 82, 107–9, 116–17, 120, 129, 30–132, 154–7, 163–8, 178–9; and transit of Venus, 101–2; and 12-inch refractor, 192–7; and University of California regents, 29–30, 185, 189; and Wilson’s Peak, 197–8; Work for Lick Trust, 40–1, 91
Foucault, J. B. Léon, 62
Francis, James B., 102, 114
Fraser, Floretta McClellan, 83, 101
Fraser, Howard, 12
Fraser, John (Jack), 12, 13, 31
Fraser, Thomas, xi, 30–1, 202, 203; background, 11–13, 20; building plans, 76, 81, 82; at completion of Mount Hamilton, 169–70, 189–91; design for meridian circle house, 104; friendship with Floyd, 13, 89, 95–6, 188–91; and great dome, 136–9, 145–6, 153; and Holden, 105, 113, 135–6, 159, 160, 188; joins Lick Trust, 67; and Keeler, 146–7; leaves Mount Hamilton, 83; and Lick, 13, 149; life at Mount Hamilton, 83; on observatory site, 17, 25, 27, 33–4, 69; at Santa Catalina Island, 112; superintendent of construction, 70, 83–91, 100, 106–7, 148; and 36-inch refractor, 115, 119–20; and transit of Venus, 101–2; and 12-inch refractor, 87, 92, 95–6, 99; and visitors to Mount Hamilton, 70–3, 86–7, 98–9, 101–3; visits East Coast observatories, 113–16; and Warner and Swasey, 129; and Wilson’s Peak, 197–9, 201
Frey, H. R., 112
Friedlander, Isaac, 24
Gadesden, Valentine, 175
Gekkie, Archibald, 49
Gill, David, 49–50
Gilman, Daniel C., 10
Graham, F. M., 103
Grubb, Howard, 41, 42, 48, 49, 58; and Lick telescope, 82, 93, 130–2, 140–2; and Vienna telescope, 75–6, 127
Grubb, Thomas, 41, 57–8
Guinand, Louis, 57
Guinand, Pierre Louis, 57
Hager, John, 120, 185
Hale, George Ellery, 196–7, 199
Hall, Asaph, 79, 116, 118
Hallidie, Andrew, 185, 189
Hamilton, Laurentine, 25–7
Hamilton, Marmaduke, 142
Harkness, Harvey W., 202
Heard, Phoebe Apperson, 181
Henry, Joseph, 8, 13–15, 39, 45, 80
Henry, Paul, 56, 115, 154
Henry, Prosper, 56, 115, 154
Herrmann, A. T., 33
Hilgard, E. W., 160
Hittell, Theodore H., 23
Hoffman, Charles T., 25–7
Holden, Edward Singleton, 99; article on observatory, 158–9; background,
Index

229

Lick, John (father), 2
Lick, John (son), 9, 53, 62–4
Lick House, 5, 6, 54, 63, 65, 112, 183
Lick’s Folly, 4, 9
Lick Trust, 1; First, 15, 22–3, 65; Second, 23–5, 29, 52–3; Third, 53–4, 62–3, 111–12, 182–3, 185–8, 192–3
Lockyer, Joseph Norman, 14–15, 45, 80
Lovell, J. L., 100
Lyons, Henry Augustus, 20, 22
McAlister, Hall, 62
McDonald, John, 85–6
Madden, Thomas, 89, 202
Madeira, George, 7
Mantooth, 154, 155
Martin, Adolphe, 48
Mastick, Edwin B., 52–3, 55, 112, 175, 183, 187; and completion of observatory, 191–2; visits Mount Hamilton, 86, 99, 186
Mathews, Henry E., 24–5, 60, 61, 92, 189; and Grubb, 130–2, 143, and Lick Third Trust, 53, 54; visits to Mount Hamilton, 86, 99, 100, 101
Matthews, Cora, 101, 143–5
Maxwell, James Clerk, 49
Mercury, 67, 99, 100
Merz, Sigmund, 62
Meyer, Conrad, 5
Mhoon, John B., 189
Milky Way, 194
Mills, Darius Ogden, 10, 15, 38, 79, 81
Mount Copernicus, 85
Mount Hamilton, 25–7, 158–9, 195–6; bricks for, 87; Barnham observations on, 70; 3; candidates for observatory director, 14–15, 45, 79, 80, 120–3, 125; construction, 82–9, 106, 107, 117; facility turned over to University of California regents, 189–91; first scientific expedition to, 67–9; large dome, 136–42, 145–6, 153–4; Lick plans for, 80–2; median circle, 103–4, 126; road, 32–3; time service, 146; U.S. land grant, 33, 39; water supply, 84–6, 153, 180–1; weather, 71–2, 86, 109–10, 166–8; windmill, 153; see also Mount Hamilton telescopes
## Index

Mount Hamilton telescopes (cont.)
  9, 194; 12-inch refractor, 87, 92–3, 95–7, 98–9, 103, 171, 179, 195–6
Mount Kepler, 85
Mount St. Helena, 17, 25
Mount Wilson Observatory, 179, 197
Murietta, Joaquin, 25
Murphy, Bernard D., 27
Naval Observatory, 15, 35, 78, 94
Neumann, 48, 168, 171–2
Newcomb, Simon, 15–16, 36–8, 49, 101–2; on astronomy, 119; and bidding system, 93, 156; and candidates for observatory director, 79, 80, 123; and early plans for observatory, 27, 69, 80; and Floyd, 35–9, 47, 73–4, 176; on Grubb, 42; on Holden, 187–8; and Mount Hamilton telescopes, 40, 58, 82, 107, 108, 130–2, 115, 117–19, 156
O’Halloran, Rose, 196
Palisa, Johann, 62
Palomar Mountain, 197
Paris Observatory, 48, 55, 56, 57
Parker, William H., 152
Pershing, Edward, 105, 133
Petit, T. W., 87
Phipps, T. Guy, 185, 189, 192
Photography, astronomical, 39, 40, 56, 101, 115, 179
Photolithograph, 101, 102
Piazzi-Smyth, Henry, 49–50
Pickering, Edward C., 79, 114
Pickering, W. H., 198–201
Plum, Charles, 51–5, 58, 183, 185–6; and Floyd, 169, 181–2; and Fraser, 107; and 36-inch refractor, 75, 155, 156; visits Mount Hamilton, 86, 99, 170
Porter, Tom, 19, 20
Raitson, William C., 10
Red, W. T., 103
Repsold, 126, 138
Rigel, 168, 170
Roby, Francis M., 190
Ross, Judge, 89
Rose, Lord, 42–3, 48
Rowland, Henry A., 41
Royal Astronomical Society, 131
Rutherford, Lewis M., 114–15
Saemmler, George, 127, 174
St. Goddard, 48
San Francisco Chronicle, 173, 175
Santa Catalina Island, 65, 112, 182, 183
Santa Clara Board of Supervisors, 32–3
Sargent, Aaron, 33
Saturn, 168, 171
Schmidt, A. W. von, 17
Schönefeld, George, 55, 60; as Lick trustee, 53, 99, 155, 175, 183; as manager of Lick House, 7, 51, 68
Scott, Irving M., 138, 139
Selby, Thomas, 10, 15, 23
Shane, Mary Lea, 204
Shatto, George, 182
Sherman, William, 53, 55, 86, 96, 111, 183
Shorb, James (Barty), 89, 197–8
Shorb, Joseph Campbell, 88
Smithson, James, 8
Smithsonian Institution, 8
Society of California Pioneers, 202; and Lick, 8, 60, 61, 149; residency legatee of Lick estate, 64, 111, 183
Sonnensfeld, Howard, 40
spectroscopy, 39, 40, 51, 56, 157
Spence, Edward F., 197, 198, 199
Staples, David Jackson, 8–10, 98
stars, double, 71
Stokes, George, 45, 49
Stone, Ormond, 113
Struve, Otto Wilhelm, 106–7
sun, 45, 199–200
Swasey, Ambrose, 93, 94, 127, 129, 186; and Holden, 172–3; and 36-inch refractor, 133, 163–8; see also Warner and Swasey
telescopes, 197; eye-end controls, 95, 126–7; mechanical components, 133; refractor vs. reflector, 38–40, 44, 50, 51, 58–9, 75–6; Chabot Observatory 10-inch refractor, 174; Dearborn Observatory 18-inch refractor, 76–7; Draper 12-inch refractor, 40; Draper 28-inch refractor, 40; Harvard College 15-inch refractor, 77; Ealing 276-inch reflector, 75; Huggins 15-inch refractor, 44; Huggins 8-inch Cassegrain reflector, 44; Imperial Observatory 30-inch reflector, 82, 114; Melbourne 48-inch reflector, 41, 58; Naval Observatory 5-inch refractor, 94–5; Naval Observatory 7-inch refractor, 95; Naval Observatory 26-inch refractor, 15, 35, 119; Paris Observatory 13-inch reflector, 48; Paris Observatory 29-inch reflector, 48; Vienna Observatory 276-inch refractor, 41; West Point Observatory 12-inch, 115
Thomson, William, 48–9
Index

Tison, William S., 142–3
Todd, David P., 100–2, 123
Trouvelot, Léopold, 80, 103

Union Iron Works, 132, 138–40, 153–4
United States Congress, 33, 39
University of California, 33, 149; board of regents, 29–30, 61, 185, 189–91, 195, 202; Holden as president of, 120–5, 159–60

Vega, 44
Venus, 100–1, 170

Wallace, William, 10
Warner, Worcester R., 93–7, 127, 133, 135, 177; see also Warner and Swasey

Warner and Swasey, 95, 113, 133, 136–7, 197; and Clark's, 177–8; ideas borrowed from Grubb, 140–2; and 6-inch telescope, 126–9; and 36-inch telescope, 97, 129, 130, 132–3, 167, 178; and 12-inch telescope, 92–7

Watson, James, 76
Watson, J. C., 100
Welcker, William, 101
West Point Observatory, 115
Wilson, Don Benito, 197
Wilson, Ralph E., 86
Wilson's Peak, 197–9

Yerkes, Charles T., 199
Yerkes Observatory, 197
Young, Charles, 115