

radiant, *adj.* and *n.*

Brit. /ˈreɪdɪənt/, *U.S.* /ˈreɪdiənt/ Forms: ^α. I ME-16 **radyant**, 15 **radiaunt**, 15 **radyaunt**, 15 **radyaunte**, 15- **radiant**, 16 **readiant**.^β. I ME-15 **radient**, 16- **radiant** (now *nonstandard*). [^γ classical Latin *radiant-*, *radiāns*, present participle of *radiāre* RADIATE *v.* Compare Middle French, French *radiant* (first half of the 13th cent. in Old French), Spanish *radiante* (mid 15th cent.), Portuguese *radiante* (1572), Italian *radiante* (c1224).

In sense A. 4a after German *strahlend* (1777 in the passage translated in quot. 1780).

With forms in *-ent* compare *-ENT suffix*.]

A. *adj.*

1. a. Sending out rays of light; shining brightly. Also *fig.*

c1450 in *Archiv f. das Studium der Neueren Sprachen* (1913) **131** 61 Blissede be þi browes..Silke thredys twynede, gilted most heuenliture, Gay, radyant, to þam may likenede bee. **?a1475** *Ludus Coventriae* 358 Heyl radyant sterre; the sunne is not so bryth. **c1510** *Gesta Rom.* Add. Stories ii. 433 [Christ's] body yt was..more radyent than ony syluer. **1577** J. GRANGE *Golden Aphroditis* sig. D.iv, Wherefore (thou radyant Starre) seyng an easye conqueste requireth the Conqueroures clemencye, [etc.] **1600** SHAKESPEARE *Midsummer Night's Dream* III. i. 87 Most radiant Pyramus, most lillie white of hewe. **1604** M. DRAYTON *Owle* sig. Gv, The great Eagle..Which from the mountaine (with a radiant eye) Brau'd the bright Cressit of the glorious skye. **1667** MILTON *Paradise Lost* III. 63 On his right The radiant image of his Glory sat, His onely Son. **1725** POPE tr Homer *Odyssey* II. v. 354 Far on the left those radiant fires to keep The Nymph directed, as he sail'd the deep. **1742** E. YOUNG *Complaint* IV. 373 This gloom of night,..with all her radiant worlds. **1812** J. WILSON *Isle of Palms* II. 493 Her little sail beneath the sun Gleams radiant as the snow. **1838** R. W. EMERSON *Lit. Ethics in Wks.* (Bohn) II. 208 The humblest..in view of these radiant facts, may now theorize and hope. **1872** J. S. BLACKIE *Lays of Highlands* 75 The height which bears The sailor's radiant mark. **1920** F. S. FITZGERALD *This Side of Paradise* II. v. 305 He stretched out his arms to the crystalline, radiant sky. **1961** *Times* 27 Sept. 10/3 The radiant sun of durable peace should shine over mankind. **1997** J. HATFIELD & G. BURT *Unauthorized X-Cycl.* 112 A radiant effulgence created by disintegrating timber was believed..to be the spirits of massacréd Indians.

b. Of the eyes, a look, etc.: bright or beaming (as with joy or love). Of a person, esp. a young woman or bride: giving off an aura of joyfulness or health; glowingly happy.

In earlier quotes., esp. those relating to eyes, with admixture of sense A. 1a.

1589 T. LODGE *Scillaes Metamorph.* sig. Bv, It was my chauce..to spie a Nimph of such a radiant glancing. **a1631** J. DONNE *Epithalamion* 181 in *Poems* (1633), May never age, or error overthwart With any West, these radiant eyes, with any North, this heart. **1690** T. SHADWELL *Amorous Bigotte* IV. i. 37, I am so dazed with your radiant Eye. **1722** E. THOMAS *Misc. Poems* 52 Celestial Faith, her welcome Change did bless, and radiant Smiles, declar'd her Happiness. **1794** R. BURNS *Poems & Songs* (1968) III. 747 The glorious sun..Out-rivall'd by the radiant eyes Of..charming Chloe. **1814** WORDSWORTH *Excursion* VIII. 381 From the rocky garden mount..descends..a radiant Girl, For she hath recognized her honoured Friend, The Wanderer ever welcome! **1859** N. HAWTHORNE *Fr. & Ital. Jrnls.* II. 287 The most radiant eye that the dull earth ever opened to see heaven withal. **1898** R. S. HICHENS *Londoners* vi. 93 He glanced again at the radiant Huskinson, now in animated conversation with Lady Pearl. **1925** F. S. FITZGERALD *Great Gatsby* vi. 132 Perhaps some unbelievable guest would arrive, a person infinitely rare and to be marvelled at, some authentically radiant young girl. **1967** T. WILDER *Eighth Day* i. 85 The Princess of Trebizond gave him her hand, a radiant smile, and tripped upstairs. **1986** *Los Angeles Times* 31 Aug. VI. 12/5 The intended result is to have the deb look as radiant as a bride, but still innocent and sweet. **2005** M. DAVID *Slow down Diet* VII. 155 Have you ever met someone who..became 'born again' in his or her body and is now more vibrantly alive, radiant, happy, and inspired?

c. Of an object or image: represented as sending out rays of light, or having radial projections resembling such rays; (*Heraldry*) = RAYONNÉ *adj.*

1614 J. SELDEN *Titles of Honor* 138 Which the learned Paschalius interprets for a Crown radiant. **1661** S. MORGAN *Sphere of Gentry* IV. vi. 83 A kind of radiant or pointed Coronet. **1729** J. MARTYN *Lect. Bot.* 19 In form of a radiant Star. **1780** J. EDMONDSON *Compl. Body Heraldry* II. (Gloss.), *Radiant, Rayonned*..terms used to express any ordinary edged with glittering rays, or shining beams. **1799** tr. *Laboratory* (ed. 6) II. i. 16 The radiant crown, on ancient coin, signifies that the prince was..Deified. **1863** *Harper's Mag.* Jan. 168/1 He took a tablet and drew on it a figure of a radiant sun, with the name Jesus indicated in the centre by the monogram I.H.S. **1894** H. GOUGH & J. PARKER *Gloss. Terms Heraldry* (new ed.) 491 Azure, on a pale radiant or, a lion rampant gules. **1910** *Amer. Jrnl. Archaeol.* **14** 386 A youth

wearing a radiant crown approaches on a winged horse. **1977** *Art Jnl.* **36** 274/1 In examining the statue's face, Trachtenberg discusses the radiant crown which adds an aura of beatitude. **2005** *Independent* (Nexis) 2 May 44 You get an edge that's serrated, or viscous, or radiant, or spongy, or frilly.

2. ŕa. Of (esp. solar) heat: strong, fierce. *Obs.*

1508 J. FISHER *Treat. Penyt. Psalmes* sig. xx.vi, Ionas..made hym a shadowynge place for his defence agaynst the radyaunte heet of the sonne. **1633** W. LITHGOW *Scotlands Welcome* sig. G3, Twixt Thy Heart and Soule, two Tropicks great, I vnder-plac'd, may find Thy radiant heat. **1672** J. EVELYN tr. R. Rapin *Of Gardens* II. 75 His [sc. the Sun's] radiant heat Should on your house through various windows beat. **1707** J. MORTIMER *Whole Art of Husb.* xiii. 292 The Sun may lend His influence from the East; his radiant heat, Should on your House thro' various Windows beat. **1782** *Literary Amusements* I. 78 The rising sun—the radiant heat of noon, the mild beams of the same great luminary, with the last departing gleam of the grey twilight. **1862** E. STODDARD *Morgesons* xli. 256 Neither bird nor insect chirped; they were hid from the radiant heat in tree and sod.

b. Of light: issuing or appearing in the form of rays; shining, splendid, dazzling. Also *fig.* (of beauty, qualities, etc.): shining or projected outward like rays of light.

1509 S. HAWES *Pastyme of Pleasure* (de Worde) xxv. sig. J.viii v, The mone..is fayre resplendysshaut In the longe nyght with rayes radyante.. **1517** S. HAWES *Pastime of Pleasure* (1928) iii. 18 The radyant bryghtnes of golden Phebus. **1548** N. UDALL et al. tr. Erasmus *Paraphr. New Test.* Pref. C ij b, The clere radiaunt sunnebeames of his holy woorde. **1616** SHAKESPEARE *Twelfth Night* (1623) I. v. 163 Most radiant, exquisite, and vnmatchable beautie. **1646** SIR T. BROWNE *Pseudodoxia Epidemica* (1686) v. ix. 202 With scintillations, or radiant Halo's about their heads. **1688** J. BARKER *Poet. Recreations* II. 11 Bright Chrysolites, and Stones of Jasper, Make but a poor Resemblance of this light, Whose gilt and radiant Beams appear too bright. **1750** W. SHENSTONE *Elegies* ix. 28 All that bears the radiant stamp of Kings. **1781** W. COWPER *Truth* 61 Meridian sunbeams tempt him to unfold His radiant glories. **1810** G. CRABBE *Borough* i. 9 Velvet Leaf with radiant beauty drest. **1878** M. A. BROWN tr. J. L. Runeberg *Nadeschda* 66 A radiant glow o'erspread Her rigid face. **1922** J. JOYCE *Ulysses* I. 6 He swept the mirror a half circle in the air to flash the tidings abroad in sunlight now radiant on the sea. **1989** S. HOLBECH *Power Gems & Crystals* i. 6 When I..had an NDE..I simply found myself out of my body, being drawn through a circle of radiant white light..into a tunnel-like space. **2002** *Nature Photographer* Summer 22/1 Southwest slot canyons where radiant streaks of midday sun suddenly penetrate cracks high above your head.

3. Bot. Extending outwards from a common centre; having parts that extend in this way. Also: having outer florets that differ from the inner ones; having ray florets. Cf. *RADIATE* *adj.* 1a. Now *rare*.

1737 P. MILLER *Gardener's Dict.* (ed. 3) at *Gallium*, The Leaves..are produc'd at the Joints of the Stalks, five or six in Number, in a radiant Form. **1789** tr. Linnaeus *Syst. Vegetables* II. 629 Pectis. Receptacle naked... Radiant florets. **1830** J. LINDLEY *Introd. Nat. Syst. Bot.* 153 The radiant stigma of Papaver. **1836** J. C. LOUDON *Encycl. Plants* 1103/2 *Radiant*, or *Radiate*, a flower is said to be radiant, when, in a cluster or head of florets, those of the circumference or ray are long and spreading, and unlike those of the disk. **1847** W. E. STEELE *Field Bot.* 34 Pet[als] obovate, the outer ones radiant and deeply bifid. **1901** J. MUIR *Our National Parks* iv. 111 The leaves are about three or four inches long, in clusters of five, finely tempered, bright lively green, and radiant. **1922** *Bot. Exchange Club, Rep. for 1921* 407 The property of producing radiant marginal florets seems inherent in the genus [sc. *Centaurea*] and is, no doubt, a latent character in the group of *nigra*. **1958** *Ann. Missouri Bot. Garden* **45** 2 Early Spanish missionaries to the New World saw in the radiant flowers of *Passiflora* a symbol of the Crucifixion.

4. a. Of heat: transmitted by radiation, rather than by convection or conduction.

The radiation is now identified with electromagnetic radiation in the infrared part of the spectrum.

1780 J. R. FORSTER tr. C. W. Scheele *Chem. Observ. & Exper. Air & Fire* 74 The heat darting from this hillock all around, is that which may be reflected by a polished metal plate; that on the contrary which rises upwards, and may be driven by winds to and fro, unites with Air. I will call the first kind, for distinction sake, radiant heat. **1800** W. HERSCHEL in *Philos. Trans.* (Royal Soc.) **90** 291 If we call *light*, those rays which illuminate objects, and *radiant heat*, those which heat bodies, it may be inquired, whether light be essentially different from radiant heat? **1806** W. HENRY *Epit. Chem.* (ed. 4) I. iii. 27 Radiant Caloric exhibits several interesting properties. **1869** E. A. PARKES *Man. Pract. Hygiene* (ed. 3) 309 Radiant heat from an open fire. **1871** B. STEWART *Heat* (ed. 2) §398 Instruments for measuring the intensity of the sun's radiant heat have been devised. **1921** *Gas Manuf., Distribution & Use* (Brit. Comm. Gas Assoc.) II. 113/1 The fire-clay material when so heated emits radiant heat which is rapidly transferred through the tubes to the water. **1983** J. S. FOSTER *Struct. & Fabric* (rev. ed.) I. iii. 224/1 The fireback sloping forward to direct radiant heat into the room. **2005** M. BJORNERUD *Reading Rocks* iv. 106 In the frigid hinterlands of the solar system, far from the radiant heat of the Sun, the solid forms of water, carbon dioxide, and methane could persist.

b. Designed to emit radiant heat, esp. for cooking or heating.

1917 *Times* 23 Aug. 3/2 An electric radiant heater is used to maintain the necessary temperature. **1936** FABER & KELLS *Heating & Air-conditioning* iv. 81 The warming effect of convectors is slower than with the radiant type of heater. **1951** *Good Housek. Home Encycl.* 35/2 More recently the use of 'radiant radiators'..has become more common. **1957** *Heating, Ventilating, Air Conditioning Guide* **35** 399 Radiant heaters..have a refractory directly above the burners which is heated to incandescence. **1987** A. TULL *Food & Nutrition* (ed. 2) v. 252/2 The most familiar type of hotplate is the radiant ring. **1993** *Collins Compl. DIY Man.* ix. 407/1 Some gas and solid-fuel boilers can be fitted as a 'back boiler' behind a radiant fire or room heater.

5. Characterized by divergence of lines or rays from a central point or region. Now *rare*.

1799 A. WALKER *Syst. Familiar Philos.* ii. 45 The filings will leave their radiant direction and catch hold of filings of the opposite poles. **1825** J. NICHOLSON *Operative Mechanic* 406 Cut into grooves,..in a radiant direction from the centre. **1851** J. RUSKIN *Stones of Venice* I. xx. 223 The scallop also is a pretty radiant form. **1881** *Nature* 17 Mar. 462 A means..for carrying energy in a 'radiant' manner (i.e. in the direction of the rays of light from a point) in all directions. **1957** *Vigiliae Christianae* **11** 86 The radiant flutings are not modelled from the curved or rounded ribs of a scallop shell. **2000** *Garden Hist.* **28** 274 From the apse, three pathways diverge in a symmetrical radiant pattern. **2006** 'L BURANA' *Try* ii. 16 Deep crow's feet ran in radiant lines to his cheeks.

B. n.

1. a. Physics. A point, or a small region or object, from which light or heat radiates; a substance or object emitting radiation. Now *rare*.

1728 E. CHAMBERS *Cycl.* at *Radiant-Point*, All the Rays proceeding from the same Radiant continually diverge... Every Ray carries with it the Species, or Image of the Radiant. **1800** *Philos. Trans.* (Royal Soc.) **90** 295 Our next division comprehends the heat of coloured radiants. **1869** J. TYNDALL *Notes on Light* §291 All bodies, whether luminous or non-luminous, are radiants; if they do not radiate light they radiate heat. **1926** *U.S. Patent 1,574,547* 2/1 Stefan's law..makes the total amount of radiation proportional to the fourth power of the absolute temperature of the radiant.

b. Each of the heating units or elements in a radiant heater.

1914 *Rep. Brit. Assoc. Advancem. Sci.* 1913 436 A little later a more marked step in the evolution of the new radiating fire consisted in joining the two or three fireclay pieces into one, and thus making the firefront consist of a series of hollow fireclay columns (now known as radiants). **1936** *Economist* 28 Mar. 738/1 Our 'Thermo-XX Beam' radiant..was the first radiant designed to emit an increased proportion of short infra-red rays. **1953** 'N. SHUTE' *In Wet* 173 They sat down in arm chairs before the radiants of the electric fire. **1985** *Times* 15 Mar. 22/6 The radiants for conventional gas fires are produced in gas-fired kilns. **2006** *Macon (Georgia) Telegraph (Nexis)* 17 Nov., The ceramic heating radiants must be in good shape.

†2 Geom. A straight line drawn from a fixed point about which it can revolve, sweeping out a curve or surface. *Obs.*

1842 W. T. BRANDE *Dict. Sci., Lit. & Art* 1012/1 The theory of the description of lines of the second order by the intersection of radiants is given by Newton in the *Principia*. **1846** in L. Campbell & W. Garnett *Life J. C. Maxwell* (1882) 77, r and r' being the radiants to any point of the curve from the two foci.

3. Astron. The point or small region of the sky from which the meteors in a meteor shower appear to diverge; a radiant point.

1864 *Brit. Assoc. Rep. Meteors* (1865) 101 Professor Heis..has..divided his meteor-showers and radiants into bi-monthly divisions. **1884** *Athenæum* 20 Dec. 809/3 The meteors from some radiants leave a streak; those from others are swift. **1927** H. N. RUSSELL et al. *Astron.* I. xiii. 457 Some of the radiants, notably that of the Perseids, are about equally active every year. **1996** *Guardian* 9 Dec. II. 38/2 Close to Castor is the radiant of this week's Geminids meteor shower.

SPECIAL USES

radiant efficiency *n.* the ratio of the radiant flux emitted by something to the power it consumes.

1901 *Science* 19 July 109/1 The *Radiant Efficiency of Vacuum Tubes. **1914** *Rep. Brit. Assoc. Advancem. Sci.* 1913 435 The true remedy must be sought for in increasing the 'radiant efficiency' of the [gas] fire. **1936** FABER & KELLS *Heating & Air-conditioning* iv. 74 Their [sc. gas fires'] radiant efficiency is about 50 per cent. (with an additional 10 per cent. convection). **2000** C. E. BAUKAL *Heat Transfer Industr. Combustion* viii. 310 The burner was reported to have a radiant efficiency of 80%, compared to an efficiency of 40% for conventional high-temperature burners.

radiant energy *n.* energy in the form of radiation, esp. electromagnetic radiation.

1869 C. F. WINSLOW *Force & Nature* 400 Some exhaustless *radiant energy has been constantly, though paradoxically, insisted upon as necessary to enable our central orb to diffuse his rays so far and potently. **1914** *Rep. Brit. Assoc. Advancem. Sci.* 1913 436 Part of the radiant energy is directly determined..by using a radiation calorimeter. **1970** M. V. KLEIN *Optics* iv. 121 The radiant energy density..is the radiant energy contained in a unit volume of space. **1989** S. SCHNEIDER *Global Warming* (1990) ii. 16 Because the earth has temperature, it emits radiant energy known as thermal radiation or planetary infrared radiation.

radiant flux *n.* a flux of radiant energy; (*Physics*) the rate of flow of radiant energy.

1896 *Science* 17 July 78/2 The *radiant flux of energy from the sun is $W = V.EH$. **1917** *Astrophysical Jrnl.* **45** 44 Through this space radiant energy is passing at a certain rate. This rate constitutes the radiant flux through the space. **1944** *Jrnl. Optical Soc. Amer.* **34** 252/2 When radiant flux is evaluated with respect to its capacity to evoke the brightness attribute of visual sensation it is called luminous flux. **1994** R. G. FLEAGLE *Global Environmental Change* ii. 23 To understand the effect of adding one or more greenhouse gases to the atmosphere, it is useful to visualize the normal radiant fluxes passing through the top of the atmosphere.

radiant heating *n.* heating of a room or area by means of radiant heat; freq. *attrib.*

1825 *Philos. Trans. (Royal Soc)* **115** 187 (*title*) An experimental enquiry into the nature of the *radiant heating effects from terrestrial sources. **1912** *Cassier's Mag.* **41** 570/1 The demonstrations were continued..at the experimental works of the Radiant Heating Syndicate. **1966** *McGraw-Hill Encycl. Sci. & Technol.* XI. 213/1 Any radiant-heating system using a fluid heat conveyor may be employed as a cooling system by substituting cold water or other cold fluid. **1982** P. WAYBURN *Adventuring in Alaska* II. 90 Most of the ferries have a solarium or sundeck, where there are deck chairs and a radiant heating system that keeps you cosy even in frigid weather. **2006** *Banff* (Alberta, Canada) *Crag & Canyon* (Nexis) 28 Nov. 23 The Canmore Hotel plans to build a fenced outdoor area complete with radiant heating below the existing patio.

radiant-heated *adj.* heated by means of radiant heat.

1937 *Charleston* (W. Va.) *Daily Mail* 17 Oct. 4/6 (*heading*) Advantages of Century's *Radiant Heated Oven. **1962** *Punch* 24 Jan. 178/2 The 'tropical radiant-heated indoor pool'. **2001** *N.Y. Times Mag.* 5 Aug. 46 (*caption*) The living room..has radiant-heated concrete floors.

radiant point *n.* a central point from which lines or rays diverge; (*Astron.*) the radiant (sense B. 3) of a meteor shower.

1665 R. HOOKE *Micrographia* lix. 241 For the discovery of small Stars, the bigger the aperture be, the better adapted is the Glass;..by that means, uniting more Rays very near to one point, it does make many of those *radiant points conspicuous. **1737** J. ROWNING *Nat. Philos.* III. 34 Let the Distance of the radiant Point be 20, and the Radius of Convexity be 5. **1833** N. ARNOTT *Elem. Physics* (ed. 5) II. 209 If the distance of the radiant point be very great, they [sc. the rays] really are..nearly parallel. **1864** A. S. HERSCHEL in *Monthly Notices Royal Astron. Soc.* (1865) 33 Two radiant-points of shooting stars..presented themselves in Auriga and in Cetus. **1907** *Amer. Math. Monthly* **14** 64 The resulting four triangles..will be commonly co-polar in the radiant point *O*. **1991** C. A. RONAN *Nat. Hist. Universe* 146/1 Thus there are the Perseids with their radiant point in Perseus, the Leonids with a radiant in Leo, and so on.

radiant power *n.* the ability to radiate heat, or light; (*Physics*) the power of radiated energy; *spec.* = *radiant flux n.*

1863 E. L. YOUMANS *Class-bk. Chem.* 142 If the metal is covered with woollen or velvet, its *radiant power is increased. **1864** *Philos. Trans. (Royal Soc.)* **154** 368 The radiant power of the salt is little more than one-third that of the glass. **1923** *Sci. Papers U.S. Bureau of Standards* No. 475. 132 The ratio of luminosity to radiant power—the luminous efficiency. **1932** A. C. HARDY & F. H. PERRIN *Princ. Optics* i. 19 If the human eye were uniformly sensitive to radiation of all wave lengths, the radiant power expressed in watts would provide an adequate method of evaluating the flux. **2003** *Proc. National Acad. Sci. U.S.A.* **100** 6282/1 The first step of the analysis was to multiply the figures..by the spectral radiant power distribution of D65 light.

radiant region *n.* *Astron. Obs.* the small region of the sky from which the meteors in a meteor shower appear to diverge; cf. *radiant point n.*

1841 *Trans. Amer. Philos. Soc.* **7** 267 A *radiant region, if not a radiant point, was soon perceivable. The paths traced back..passed through a circle..with a radius of 2°. **1899** *Science* 6 Jan. 37/1 The discovery of this comet..on the radiant region of the Leonids, is the most interesting episode of the meteor observations.