The photograph on the cover shows an eruption of Kilauea on the island of Hawaii. (Mauna Ulu fountain, 6 September 1969, US Geological Survey Photo.)

## PROLOGUE

p.8 Second line after Equation (10): …the variable *t* in Equation (10)…

p.42 Problem 6. Add: Take values of 800 $kg/m^3$ and 0.20 Pa · s for the density and the viscosity of the fluid, respectively.

p.46 Problem 32, line 2: …at the smaller exit…

## CHAPTER 1

p.69 Third line from bottom: Young's modulus is equal to $12.3 \cdot 10^{10}$ $N/m^2$.

p.95 Middle of page: change Xref Equation (16b) to Equation (19)

p.102 Second line after Equation (24): change Xref Equation (22) to Equation (24)

p.115 Second line after Equation (33): change Xref Equation (31) to Equation (30)

p.123 Second equation from top:

$$\ldots = 6\pi\mu r v_{max}^2 = \frac{8\pi}{27}\frac{r^5(\rho-\rho_{oil})^2 g^2}{\mu} = 4.11\cdot 10^{-6}\,\mathrm{W}$$

p.128 Equation (E24):

$$\eta_2 = \left(\sum_{i=1}^{n}\mathcal{P}_{av,i} - \mathcal{L}\right)\Bigg/\sum_{i=1}^{n}\mathcal{P}_{av,i} = 1 - T_o\Pi_s\Bigg/\sum_{i=1}^{n}\mathcal{P}_{av,i}$$

p.142 Change index in Equation (62):

$$I_{mech}(max) = I_{in}(max)\left[1 - \frac{abT_o}{abT-(a+b)I_{in}(max)}\right]$$

p.143 After Solution: change Xref Equation (62) to Equation (63)

p.143 Last paragraph: change Xref Equation (60) to Equation (61) [two times]

p.148 Problem 34: change c) to b)

p.150 Problem 51c: change $(T–T_o)2/T$ to $(T–T_o)^2/T$

## CHAPTER 2

p.162 Third line from bottom. Change In Figure 3… to In Figure 4…

p.163 Figure 4: $T/T_o$ should be replaced by $T/T_D$

p.184: Equation (64): $P^{1-\gamma}T^{\gamma} = constant$

p.238 Problem 19. Add the following: The energy supplied in melting and in evaporating one mole of argon is 1.18 kJ and 6.52 kJ, respectively.

p.239 Equation at top of page: change signs:

$$S_e = \int_{V_i}^{V_f}\Lambda_V dV + \int_{T_i}^{T_f} K_V dT$$

## INTERLUDE

p.263 Change Equation (64) to

$$\gamma' = \frac{K_P - K}{K_V - K}$$

Change 3rd sentence after Equation (64) to: For negative values of $K$, $\gamma'$ changes from 1 to $\gamma$; for values of $K$ between 0 and $K_V$, the polytropic exponent increases to $+\infty$; finally, for $K \geq K_V$, the exponent is in the range of minus infinity to 1.

p.273 Equation (93), last part:

$$\ldots = -\int_{\mathcal{A}}\frac{\partial P(V,T)}{\partial T}dVdT$$

Second line after Equation (95): change *eversible* to *reversible*

## CHAPTER 3

p.345 Second line after Equation (66): change Xref Example 40 to Example 39 p.347 Change Equation (71): add factor $A$ to the third equation:

$$I_{sa} = \frac{1}{T_a} h_a A\left(T - T_a\right)$$

$$I_{s,room} = \frac{1}{T_{room}} h_{room} A\left(T - T_{room}\right)$$

$$\dot{S} = \frac{1}{T}\dot{E} = \frac{1}{T}\left(-I_{Ea} - I_{E,room} + A\, a\mathcal{G}\right)$$

p.348 Change Equation (72): add factor A to $a\mathcal{G}$:

$$\dot{E} = -I_{Ea} - I_{E,room} + A\, a\mathcal{G}$$

Line after Equation (72): change $a\mathcal{G}$ to $A\,a\mathcal{G}$.

p.413 Example 37. Chnage absorptivities and emissivities to 0.95 and 0.21, and 0.28 and 0.95, for iron and paper, respectively.

p.443 Problem 22b: …proportional to both the square root of the total heat transfer coefficient and the difference of temperatures…

p.445 Problem 31: …and calculate the entropy current density for such radiation near the Earth.

## CHAPTER 4

p.475 Example 12: units must be J/mole

p.485 Third line from bottom: ...takes place at constant pressure...

p.510 Figure 30: replace *s/n* by *S/n*

p.545 Equations (203) and (205): change indices:

$$\left|I_{E,34}\right| = T_3\left(s_3 - s_4\right)I_m$$

$$\begin{aligned}\left|I_{E,23}\right| &= \left|I_{E,12}\right| - \left|I_{E,34}\right| - \left|I_{E,41}\right| \\ &\approx \left(h_{2'} - h_1 + T_2\left(s_2 - s_{2'}\right)\right. \\ &\quad \left. -T_3\left(s_3 - s_4\right) - \upsilon_4\left(P_1 - P_4\right)\right)\end{aligned}$$

p.585 Change Xref Equation (126) to Equation (122)

p.587 Problem 28. Change equation for $k_1$:

$$k_1 = \frac{R}{t_a^3\left(1/\pi - 4/\pi^3\right)}$$

## EPILOGUE

p.616 Third to fifth line from top. Change to: …The convective current, on the other hand, can be expressed in terms of the specific value of the quantity which is transported by matter and the flux of mass; see Equation (129) of Chapter 4:

p.620 Equation after Equation (98):

$$\int_{\mathcal{V}} \frac{\partial \rho}{\partial t} dV + \int_{\mathcal{V}} \frac{\partial}{\partial x}\left(\rho v\right) dV = 0$$

p.639 Third line after Equation (149): change Xref Equation (131) to Equation (130)

p.644 Footnote 24: the terms

$$v_x \frac{\partial u}{\partial x} + v_y \frac{\partial u}{\partial y}$$

must be replaced by

$$\rho v_x \frac{\partial u}{\partial x} + \rho v_y \frac{\partial u}{\partial y}$$

p.645 Fourth line should read: …the variation of pressure…

p.656 Problem 11, second equation: change $(\rho c_p)_a$ to $(\rho c_p)_p$.

## APPENDIX

p.672 Table A.15: change column headings $s$ / J/K and $h$ / kJ to $\bar{s}$/G/K and $\bar{\boldsymbol{h}}$/kG, respectively.

p.693 Add the following reference: I.S. Liu (1972): Method of Lagrange Multipliers for Exploitation of the Entropy Principle. *Arch. Rational Mech. Anal.* **46**.